Hugh Cecil Earl of Lonsdale

APP. 429

16H-PRA

EVERY MAN His own FARRIER.

Derby:

THOMAS RICHARDSON & SON

THE

POCKET FARRIER,

A TREATISE

ON THE

VETERINARY ART;

CONTAINING THE

MATERIA MEDICA

AND

PHARMACOPŒIA.

BY A PRACTICAL FARRIER.

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THE

POCKET FARRIER.

BREEDS OF HORSES.

English thorough-bred horses are more celebrated in Europe than any other kind. Their great excellence is to be attributed to the skill displayed in the breeding of them, rather than to the influences of our climate and pasturages. It has been remarked, that the crossing of the eastern horses with the English breed has produced all the varieties of the animal we now observe in this country.

The first is the race-horse, proceeding directly from either an Arabian or Barb, with an English mare that has been bred by a similar cross. This is what the English call their highest blood.

The second is the hunter, arising from a blood horse and half-bred mare. This class is very numerous; they are stronger than the first, and capable of undergoing great fatigue.

The third is the result of a cross of the hunter with mares of a more common description; these constitute the coach-horse. It is from these two classes that the English export so many throughout Europe, and particularly to France.

The fourth is the draught-horse, the produce of the former with the strongest mares of the country. There are some of this breed of the greatest size, and in their form and character not unlike the horses which are seen cast in bronze.

The fifth has no particular character, being the result of accidental crossing among the rest. Still, notwithstanding this mixture, the influence of the Arabian blood may be traced in some degree even among the most common sort.

The English have procured Arabian horses, and have devoted the greatest care and attention to their system of breeding, particularly by publishing the genealogy of those which they considered as their best produce. They have well understood the importance of this publication, for by these means they have been able to have recourse to stallions and mares that approach the nearest to the original blood for the purpose of breeding, and thereby to preserve the breed from degenerating.

THE RACE-HORSE.

The race-horse possesses the most beautiful form. The peculiar elasticity of the fibres, and the disposal of his limbs, furnish him with an astonishing degree of power, vigour, and speed. He is distinguished by his beautiful head; his finely set-on neck; his lengthened shoulders, which are oblique; his well bent hinder legs; his large muscular quarters; and his long elastic pasterns.

THE HUNTER.

The hunter forms a happy combination of the race horse with others of inferior swiftness, but possessing strength, vigour, and activity; and is, undoubtedly, a very useful breed. He should seldom be under fifteen, or more than sixteen hands high, since below this standard he cannot always sufficiently measure the object before him, and above this he is apt to be awkward at his work. For the general purposes of hunting, the horse should be at least three-quarters bred; and it is essential that he should be light in hand. On this account his head should be small

his neck thin, his crest firm and arched, and his jaws wide.

A broad chest is very desirable in the hunter, as by the violent and long-continued exertion of the chase, the respiration is exceedingly quickened, and consequently more blood is hurried through the veins in a given time, than when the animal is at rest; except there be sufficient room for this, the horse will be blown, and possibly be destroyed. The majority of those horses that expire in the field are narrowly chested. The loins should be broad, the quarters long, the thighs muscular, the hocks well bent, and well under the horse.

THE COACH-HORSE.

The progress of improvement has in no small degree been extended to this animal, since he is now as different as possible to the clumsy barrelled, and round-legged horse of former times. The coach-horse of the present day is a fine tall animal, deep chested, with a well proportioned body, flat legs, an sound, open, tough feet; and is possessed of an incredible degree of strength and speed. The best kind of coach-horses are the Cleveland bays, for the production of which, the Cleveland mare is crossed by a horse nearly thorough-bred, of sufficient substance and height.

THE ROAD-HORSE.

The road-horse, more difficult to be met with in perfection than either the hunter or the racer, is one of the most useful animals of which this country can boast, and it is to be regretted that they are not produced in greater abundance, and with more attention to their breed than is usually bestowed.

The best road-horses are those produced by half-bred stallions, under sixteen hands high, and mares of proportionable size.

The road-horse should have perfectly straight fore legs, and good hinder legs; and be sound on his feet; it is also of great importance that the bones beneath the knee should be deep and flat, and the tendon not tied in.

THE DRAUGHT-HORSE.

Great improvements have been effected in this useful breed of horses, and the superiority of the moderate sized, strong, active, horse, over the unwieldy, slow animals of former days, is universally acknowledged.

The draught-horse should be somewhat higher than the road-horse, with a thicker shoulder, and the nostrils should be large and open, that he may breathe freely; his legs should be rather flat than round, since roundness of the leg in a horse intended for agricultural labour is by no means favourable. No country in the world can produce horses equal in size and strength to our modern draught-horses. There are frequent instances where single horses on a plain, draw from two to three tons for a short distance, and with apparent ease from a ton and a half to two tons, for a considerable length of time. However the most decided proof of the superior strength of our British horses may be derived from the mill-horses; many of which have carried 910 lbs. for two or three miles together; and the real Cleveland bred horses have been known to carry more than seven hundred pounds for the distance of sixty miles, accomplishing this journey in twenty-four hours, and performing it four times in the week.

THE STRUCTURE OF THE HORSE.

The Head.

A large head is a general indication of stupidity; and a saddle-horse so formed, is heavy on the hand. On the contrary, a small head shows the possession of much high blood with spirit. A head of due

proportion to the usual size, or inclining to be a little larger than ordinary, and the bulk of the head being in the breadth of the forehead rather than in the length of the face, the eye standing out and lively—are the usual characteristics of a serviceable horse. For light work, a horse with a broad and flat forehead, and a short face, will answer best. But when a horse is wanted for heavy work, a narrow and rounded forehead, with long nose and face, will be a guide in choosing. A hollow across the nose, a little below the eyes, shows ill-temper. A face nearly flat generally denotes a good-tempered, good-feeding, strong, lasting, manageable horse.

The Setting-on of the Head.

The comfortable use of the horse greatly depends on this, whether in riding or driving. The mouth cannot be light and pleasant, without the head forms a suitable angle with the neck, and moves easily backwards and forwards. A horse that continually stretches his nose forwards, is always fatiguing and unsafe.

The Lips.

It is an error to suppose, that the lips are of little importance. When firm and compressed, they support the bit; and their almost continual action proves that their muscles have considerable power. When the lips of a horse are flabby and hang down, it is a sign that he is sluggish, or diseased, or old. The lips, too, should be small and thin; for fat makes them loose, and destroys that delicacy of feeling, on which greatly depends the easy management and guidance of the horse.

The Nostrils.

However distressed a horse may be, he always breathes through the nostrils. When he exerts himself very much, additional air is necessary to supply

the lungs; hence, the capability of expansion which exists in the nostrils is a wise and excellent provision; and a large wide nostril is a certain indication that the animal possesses the power of speed and endurance. The thinness of the skin of the nostril must also be observed, for fat prevents the expansion of the nostril to the necessary extent, when a horse is at full speed.

The False Nostrils.

The nostril of the horse is unlike that of any other animal. The entire opening does not lead into the inner cavity, and the nose is not only concerned with respiration, but with smelling. The large external pouch is evidently designed to divert the current of air from the sense of smell, and to convey it through the proper passage to the lungs.

The Division of the Nostril.

The nostril is undoubtedly divided, that in case of one side being affected by injury or disease, respiration may be carried forward on the other side. The membrane that covers the partition of the nostril, is continued through the windpipe and the passages of the lungs; and consequently, when inflammation exists in that membrane, or the chest, the red colour of the membrane will in some degree indicate the intensity of the disease, or otherwise. That dreadful disease the *glanders*, is, in the first instance, simply a disease of the membrane of the nose. The extension of this cartilaginous partition throughout the cavity, serves to prevent also the spreading of the *glanders*.

The Eye.

A horse's eye is a true index of his qualities. We like to see a large eye, and one rather prominent. Swollen or projecting eyelids, often denote recent or present inflammation of the eyes; and if one eye appear larger than the other, it is probable that the

disease has been more virulent in that eye. The perfect transparency of the eye is a quality of great consequence.

The Zygomatic Arch.

There is an angular projection of bone above the horse's eye. It often attracts attention on the putting on of a collar that is a little too small. This projection of bone protects the eye from the brutality of grooms, who often strike the poor animals on the head with heavy weapons, without regarding the probable consequences of their blows. This bone serves also to protect the extremity of the lower jaw, around which the temporal muscle, by whose contraction it is moved, is entwined: it also gives room for a greater bulk of muscle, and for a more powerful and extensive motion of the jaw.

The Ears.

The form and motion of the ears indicate the spirit and temper of the horse. A large ear is a sure sign that the horse has little good blood in him, and that he is dronish. The ear is lined with soft hair, to keep it warm, and obstruct insects; but this wise provision of Nature is often destroyed by ignorant grooms, who singe the hair off with a candle, to gratify their false taste.

The Bars.

The bars are duplicatures of the membrane of the palate. They have curiously fringed edges, the points of which are directed to the back of the mouth. The uneven surface of the bars, and the pointing of the fringe inwardly, help to retain the food in the mouth; but at the same time offer no obstacle to its passing into the gullet. The bars assist also in the management of the horse, by receiving some pressure from the bit; which, however, when rough or sharp, and used harshly, will often occasion inflammation and enlargement. Ignorant farriers will

burn down the swelling, which operation changes the thin membrane into a hard insensible covering, and thereby destroys the sensibility of the mouth.

The Teeth.

The fore teeth of the horse are covered with a very hard enamel, to prevent rapid wear, when the stalks of grass are hard. As one coat of enamel would not answer, the tooth is indented, and the hollow is also enamelled, that when the projections are worn away, a fresh hard surface may be presented for use.

The Grinders.

These teeth are remarkably constructed, forming perfect grindstones, to reduce the food to small particles, that it may more readily digest. There is not only one indentation of enamel, as in the front teeth, but several columns of it, passing down through the body of the teeth, that their surfaces may not be worn down, or even smooth. Another important provision is, that the bony matter between the columns of enamel goes first, and the enamel is left projecting. The grinders, too, are continually growing, and stand at about the same height as long as the horse lives.

The Lower Jaw.

The space between the branches of the lower jaw is called the *channel.* The head will sit awkwardly if it is narrow, and be constantly poking out, which will spoil the beauty of the horse, and be a sad inconvenience to the rider, for the animal will bear heavily on the hand, and cannot be reined in except by great force. The setting-on of the head depends more upon the width of the channel than any thing else.

The Neck.

The neck should be a little too long rather than too short, and the upper part should be small, that

the head may have freedom of motion. The base of the neck should have plenty of muscle; the contrary indicates weakness in the horse. The neck, however, should not be thick far up, otherwise the appearance of the animal will be heavy, and there will be much dulness in his disposition and action If the thickness is about the middle and under part of the neck, the evil is worse.

The Chest.

The chest is the most important part of the horse. It should be capacious, for the heart to beat, and the lungs to heave. A long-legged narrow-chested horse will never carry much flesh, nor be capable of continued hard work; and he will be peculiarly liable to inflammation and other diseases of the chest. The *form* of the chest is of great importance. The chest has not only to prepare and circulate sufficient blood when the animal is quiet, but to enlarge, and to be capable of preparing and circulating a great deal more, when it is rapidly expended in excessive exertion. On this account, the chest should be *deep* as well as *wide*. A circular chest is capable of little enlargement. A deep chest may enlarge; it may approach a circle, and afford plenty of room for the full play of the lungs, and the free admission of air. We admit the circular chest in the ox, and even in the dray-horse; but in the horse of light work and speedy draught, we require the advantages of the deep chest.

The Withers.

The withers are the projections of the ten first bones of the back, and high withers are considered to indicate superior action. Good and speedy action depends much on the muscles of the back; for they elevate the fore parts of the horse, and render it more easy for the power connected with the hind quarters to propel him froward. For the racer, the

hunter, and the hackney, high withers are desirable, but not for heavy horses; for in proportion to this power of elevation there is usually a lightness before, which would be a defect in him whose excellence depends on the weight and muscular power which he is able to throw into the collar.

The Spine.

The speedy action of the horse was designed for our convenience and pleasure; and the easiness and pleasantness of his action is a point of equal importance. If the back were unyielding, no rider could bear the jolting that would ensue. If it yielded too much, the animal would become too weak to perform many of the tasks that we impose upon him. The spine is, therefore, formed of a succession of joints connected with an elastic cartilage, each of which joints possesses a little motion; and the aggregate motion of the whole gives sufficient ease to the rider, without diminishing the strength of the back. The strength of the spine is secured by a very remarkable contrivance. The round head of one bone is accurately fitted into a cup in that before it and between them is placed the cartilage. there are also strong ligaments all round the spine, so that although we sometimes hear of a fractured spine—although the bones may yield to violence, the joints are rarely dislocated.

The Length of the Back.

The long-backed horse is easier in his paces, for a long spring has a more extensive and gentler motion than a short one; but in proportion to the length of the spring will be its weakness. On the other hand a short back may promise strength, but it will be accompanied by short and rough action, by slow speed, a tendency to unsafeness and over-reaching. A slim fat-sided horse, with a long back, can be good for nothing at all. A stouter horse requires length

not only to carry off an appearance of clumsiness, but because he can afford to part with a little strength for the sake of greater pleasantness of action and speed: however, for general purposes, a short-backed horse is properly preferred.

The Line of the Back.

The proper form of the back is a little depression behind the withers, and then a straight line to the loins. In the form called the *saddle*-back, there is a hollowness, as if intended for the saddle. This shows weakness, but is accompanied by easiness of action and a fine arched crest. If the horse has to carry little weight, this form is not objectionable, and it makes the animal look noble. The *roach*-backed horse is dear at any price.

The Loins.

The loins deserve particular attention. They are rightly considered to indicate the general strength or weakness of the animal. If they are broad and muscular, he will be able to perform any work; if there is no substance about them, he will be found of little use, either for the saddle or the collar.

The Stomach.

The horse's stomach is smaller than that of any other animal of his size. It will not contain half of the food which he eats at an ordinary meal. The value of the horse consists in his speed as well as in his strength. We require his services at all hours, whether full or fasting; and sometimes when journeying we are unable to allow him sufficient time for the grinding of his food, and none for its digestion. His stomach is placed close against the diaphragm —a muscular partition between the chest and belly —which, by pressing upon the lungs, produces expiration; and by its contraction the chest is enlarged, and inspiration is effected. If the stomach were

large, this muscle would not be able to perform its office, the breathing would be laborious, and the animal in continual danger of suffocation. But it is an error to suppose that he can always work with safety and comfort on a full stomach. He excels other animals in this respect, but many a horse is destroyed by being hurried after a plentiful meal.

The structure of the horse's stomach is curious. One half of it is a mere store-room for the food. Sometimes he has not time to chew and prepare his food for digestion; and, as it were, puts it into this receptacle to be softened and made more easy of digestion afterwards. Subsequently it passes into the other part of the stomach, where the process of digestion is performed, though only in a partial degree. It must, however, be fully accomplished somewhere, or the animal could not obtain sufficient nourishment

The Intestines.

The digestion of the horse's food is further carried on in the *duodenum*, which is the first portion of the intestines. This organ is larger in the horse than in almost any other animal. The process next proceeds in the small intestines, which are often sixty-six feet in length; and is further perfected in passing through the larger intestines. The first of these, the *colon*, is of an enormous size, and will usually contain twelve gallons of fluid. Here is a remarkable contrivance for the retention and more perfect digestion of the food. The colon is puckered into numerous deep cells, through all of which the food passes, and in which it is for a while detained. The *cæcum*, commonly called the *blind gut*, lies at the end of the large intestines, into which the more fluid part of the food is sent. Its still more complicated construction of cells is evidently designed for the same purpose. When the food has at length reached the last intestine, called the *rectum*, very little undigested food will be found to remain.

The Liver.

Two fluids enter the duodenum by small orifices, in order to contribute to the process of digestion. The bile comes direct from the liver; for the horse has no gall-bladder. His stomach being small, must, therefore, be oftener replenished, and the food must be oftener passing out of it; and there can be no necessity for the gall being kept in a reservoir for use at a distant time.

HINTS TO THE PURCHASERS OF HORSES.

To purchase a horse free from blemish and imperfection, is, by experience, found to be a task more difficult and arduous than the whole art of horsemanship; and there is no kind of traffic wherein there are so many deceptions practised, as in the sale of horses. It may not be unserviceable, therefore, to put down a few short directions on this subject, by way of precaution to the unwary, and such as have been the dupes of dealers and jockeys, whose business it is to impose on the credulity of the novice, by disguising every imperfection in the beast, and discovering imaginary beauties.

"I remember," says Mr. Wilson, "once to have seen a horse, which, I judged from his appearance, had been in several very indifferent hands: excessive labour had evidently been his portion, and many an ungrateful blow its reward; but, notwithstanding this, the remains of a most beautiful symmetry were yet discoverable in him. The dealer, in my presence, whipped the animal so cruelly, that I could not forbear remonstrating with him on the severity of his treatment. To which he replied, that he had certainly the same right as other tradesmen, to set off his commodity in the most advantageous light pos-

sible; 'and who would be to blame,' asked he, 'but myself, were I not to exercise that right: but if you know not the utility of what you saw, know then, continued he (at the same instant giving a crack with his whip, which made the poor scared creature ready to fly through the manger), 'that it was to collect his scattered spirits together, in case a purchaser should drop in.'—'A fig for the humanity of the world!' said I; 'and is it thus every poor devil of a horse that unfortunately falls into thy hands, is to be whipped out of his skin, merely for the sake of thy advantage?' Upon which he left the stable. The horse looked behind him the moment he heard his master quit the stable. On walking up, in order to cherish him, I observed the tears rolling down his face; which operated so strongly on my affections, that I declared I would never more see an animal beaten unjustly without punishing the offender."

There are many inconveniences arising from an immoderate use of the whip, which might be easily obviated, were it used rather sparingly, and with a little more lenity than it commonly is; for, instead of doing any real good, it not only makes the horse fearful of every motion you make about him, but it becomes very dangerous to go near him; as by his uneasiness, and shifting from side to side (expecting every moment a beating), he may probably throw you down, and trample you under his feet. We recollect witnessing a distressing scene, which happened to a man who made it a constant rule to whip the horses he had on sale three or four times a-day, to make them show more life and spirits, as he termed it; when a horse struck him down, and almost trampled him to death.

Before you make choice of a horse, you should consider for what occupation you design him; and acquaint yourself with all the excellences and imperfections of these useful creatures: for, as the moderately thin-shouldered, long-backed, tall, and flat-ribbed horse, is best adapted for racing; the

short-backed, small-jointed, and round-barrelled horse, for travel; the moderately large, and lean-head, a large windpipe, that hangs rather loose from the fleshy pannicle, small close nostrils, high withers, and the generality of the shape strong and well knit together, for hunting; the broad-backed, full-shouldered, thick-withered, wide-breasted horse, provided his legs are short-jointed, straight, strong, and well-proportioned, for a collar; so the small horse, with a short back, small head, short-jointed, and thin legs, of a well-proportioned, and handsome shape, should be chosen for ease and summer pleasure.

On entering the stable, in order to select a horse, the first thing necessary to be done, is, to see how he stands on his legs; and, particularly, that no person is in the stable with him; for, trust me, if there is any defect in either of those members, you will soon discover it by his shifting the position, and but just touching the ground with the toe of the leg affected.

Having satisfied yourself as to this particular order him to be taken into some yard, or open place; but remember to be the last in the stable, or the dealer, or some of his attendants, will make it their business to fig him without your knowledge, unless you keep an attentive eye to their conduct; for these fellows, being in the constant practice of it, are so expert, that one would imagine it was done by a kind of slight of hand.

The practice of figging pervails throughout the k'ngdom, and is so cruel in its nature, that I think, in humanity, it ought to be discarded. It is done by thrusting a piece of ginger up the fundament, which makes the horse carry his tail high, and appear to greater advantage, though but for a very short time.

Every person must be aware, that the subtile fiery nature of the ginger must cause a very uncomfortable sensation in that part: for the horse cannot stand still a moment while it remains there, consequently

it is unnecessarily teazing the horse, and setting but a very temporary advantage on him, just so long as the dealer can wring the money out of your purses; for the very next day, to your great chagrin, he will look five pounds worse for the experiment.

The horse being now before you in an open place, and not near any white wall, take your station about three or four paces off, in a line with his breast; observe his countenance, that it is cheerful, sprightly, and free from heaviness and gloom: that the ears are thin, small, evenly set, and terminate in a point; for if they are thick, long, too closely set to each other, and drooping, it is not only a great deformity, but such a horse will be dull, heavy, and sleepy. The face should be lean, and free from flesh; the forehead broad, and rather swelling outward; a star or blaze thereon are considered marks of beauty and courage: but if the forehead is flat, the face in general flat and cloudy, and a baldness appear on the nose, they are deformities. If the eyes are round, black, shining, not too big, but rather protuberant, so that they move about their orbits with a quick and lively motion, and in doing it little or none of the whites appear, they are good. But if, on the contrary, they look of a yellow cast, dull, moist, and sunk, they are bad. The nostrils should not be so large as upon every little effort to occasion the muzzle to become wide, distended, and the inside redness to appear; that being a sure sign of a short wind, and weakness. The muzzle of the nostrils should be small, and the inside free from moisture; the upper lip should not hang over the lower one, but both meet evenly together and particularly observe, that the horse is not shallow-mouthed.

From the head, look down to the chest: if it is broad, prominent, and muscular, it denotes beauty and strength; whereas the narrow chest is an evidence of deformity and weakness; the legs being set too close together, will interfere with the motion each other, and thereby greatly hinder speed,

cause the horse to stumble, and sometimes to fall. The thighs should be fleshy, sinewy, and moderately outward swelling; so that upon any little strain, or movement of the body, the muscles thereof may be clearly discerned, for they are signs of strength; the contrary, of weakness. Particular care should be taken in examining the knees; that they are lean, sinewy, close-knit, and evenly proportioned: but if they appear swelled, and feel soft as if a quantity of wind had collected between the skin and flesh; or, if one knee appears larger than the other, or looks thin and bristly, the hair broken, &c. these are true marks of a stumbler, and such a horse ought to be rejected.

In examining the pasterns, see that they are flat, lean, and free from every kind of scab, seam, and swellings. They should be strong, straight, and rather short; for a long pastern shows weakness; and such a horse cannot perform a long journey without tiring.

Nothing is more essentially necessary to be observed in the purchasing a horse, than the formation of the hoofs, which are the grand foundation of the whole mechanism of the animal; for, if they are bad, the superstructure, however finely proportioned, cannot possibly be good.

The hoofs should be smooth, tough, rather long, deep at the heel, and either black or dark brown: the former are the best proof against the effects of hard and bad roads. The white hoofs are tender, and subject to foundering. The light brown ones are brittle, consequently will not carry a shoe well. A round hoof proceeds from contraction, and the flat ones show foundering.

If the hair on the coronet, or top of the hoof, lies smooth, close, and the flesh even therewith, it is perfect; but if the hair on that part looks thin, bristly, with little scales, or scabs on the skin, and the flesh swelling over the hoof, I would advise you

not to buy such a horse, as they are the forerunners of ring-bones, crown-scabs, quittor-bones, &c.

Be particularly careful in examining the bottom of the feet; placing your thumb on the frog, compress it rather sharply, in order to discover any defect that might be there; that they are large, spreading, open, and sound. I believe I need not remind you, that the spongy, running, and decayed frogs are to be rejected.

You are now to stand about three paces off, in a line with the horse's shoulder, and take a side view of him: the neck should be small, and rather short than long; and particularly observe, that no swelling appears on the setting-on of the head. The shoulders should lie rather backward, and come round with a good sweep, and rise well up to the withers.

A horse low in the shoulders will be continually getting the saddle on his neck, unless a crupper is affixed to it. This, besides being very ungraceful, will cause him to stumble, and very probably to break down. The tail should stand rather high, flat, and bending a little inward; which, if the horse has a good buttock it will do: but on a bad buttock, a hog or goose rump, a tail cannot stand well; they are objectionable deformities.

You are now to take a view of the hind parts, standing at a convenient distance from the horse, that you may more advantageously see that the hips are broad, round, and even; also that the hind legs are lean, flat, and sinewy. Be careful that they are not fat or swelled, and that one elbow of the hock is not larger than the other; that no seams or scars appear thereon: and that he is not bow-legged.

Various are the arts used by dealers to prevent you discovering the true age of a horse by his teeth. It is therefore useless to write a long dissertation on that subject, as it would serve to perplex my reader, rather than to enlighten his judgment.

The shortest and most certain method to judge

whether a horse is young or old is this:—Turn back both lips; if the teeth are small, white, glossy, and fit evenly together, he is young; but if they are large, long, yellow, irregularly set, and the top row project over the bottom, the tusks yellow, or of a blackish colour, he is old.

Having finished your examination of the horse, see him walk and trot in hand; and let not the groom haul his head about, nor be too free with his whip; but that he leads him carelessly by the extreme end of the halter or bridle, as, by that means you will discover any defect that might possibly be in the joints, or if he be a stumbler.

Observe the motion of the legs: that the near fore leg and the far hind leg, or the far fore leg and the near hind leg, move, or shoot, at one and the same time; and that the hind legs do not obstruct the motion of the fore ones, but that all act in unison.

Order the groom to take his back, and, standing behind him, see how he walks: that he carries his head even, and the bit level in his mouth; that he does not bear down, nor pull on either side; but walks and trots straight, lifting his legs well off the ground with boldness, at the same time managing all smoothly.

If a horse makes a clattering noise in his gallop, he interferes; that is, by treading too long, or making too much play with the hind leg, he strikes the toes thereof against the corners of the shoes before, which occasions a very disagreeable noise.

It is a natural imperfection, occasioned by uneven proportion; for, on critically examining such a horse, you will find him not only low in the shoulders, which causes weakness in the fore legs, but that the hinds ones will be longest.

A horse, to gallop well, should lead off with his far fore foot, and lift his feet well off the ground, at the same time not raising them too high; and, in spreading his fore legs, he should follow even and lightly with the hind ones without cutting under

the knee, or injuring the back sinews of the fore ones.

Having seen the different paces of the horse, and formed a good opinion of him, it will not be unreasonable to request, particularly if you are the least known to the dealer of whom you are about to purchase, that you may be permitted to ride him a mile or two; and should he object to such a proposal, you would be warranted in forming a very unfavourable judgment of the horse, as well as of himself. If he permits you to ride the horse, when you are mounted, let him go his own pace, holding a loose rein: you will then have a better opportunity of knowing whether he be a stumbler, or whether he is sure-footed, and goes forward boldly, without halting or starting at every object which presents itself; at the same time that he is not heavy or dull; they both have their bad effects, and ought to be rejected for these reasons: the startlish horse, by his timidity, exposes you every moment to imminent danger; whilst, on the other hand, the sleepy or sluggish horse provokes you every moment.

OBSERVATIONS ON BREEDING.

If you would have a colt free from imperfection, be careful that there is none in either the mare or stallion; but that they are youthful, sound, and of a good breed. As to colour, it is of little consequence, as I conceive a good horse cannot well be of a bad colour; but endeavour to let their marks be as much alike as possible. The mare should be fourteen, and the stallion fifteen hands high; and not more than six or seven, or less than four years old, when they are brought together.

A mare will bring foals at three years old; but they will be stronger and better shaped at four.

I would advise you not to breed in fenny or

swampy grounds; the grass on such land being so gross, will breed humours in the blood.

The land being also too moist, will soften the hoofs, and make them grow larger than nature intended them; by which means a light carcased colt would be completely spoiled; the gross feeding alone would make his body heavier than his limbs could well sustain.

The hoofs being grown too large and heavy, will cause the legs to swell; so that, at the best, the motion of such a colt would not be near so good as that of a Flanders mare.

Supposing for a moment you would have a colt to do you credit as well as service, let the situation for breeding be a stony or gravelly soil, abounding with little hills; for they are of most excellent use for the colts to play on, and in which they much delight; it will make their hoofs tough, their legs well knit and sinewy; and the grass on which they feed not being too gross or luxuriant, they will be well-proportioned, and of exquisite symmetry.

If you have several mares with foal at one time, remember to keep them separate when they have foaled; as, otherwise, one or another of the young, by going to each other's dams, might probably get a kick that would lame him for ever after.

Colts may be weaned at seven or twelve months; as you may then give them oats, bran, and short sweet hay. Your oats may be cracked in a mill, or moistened with boiling water; but be careful you do not give it them too warm. Peas and beans are to be avoided, they are too strong and of a heating quality.

In the winter season they should be taken into the stable entirely, and made familiar to you, by rubbing them often with a horse-hair cloth, leading them to water, lifting up and setting down their feet; by which means you will find it facilitate the breaking and taming them considerably. And here I must caution you against letting servants teach them bad

tricks, as kicking, biting, and rearing on their hind feet; for if they do it will be a difficult task to break them of such vicious habits.

ON TRAINING COLTS.

At two or three years old a colt should be trained; and if he is anywise gentle, take a strong snaffle bridle, rub a little honey on the bit, and let him receive it at his mouth. Take him to some field, and exercise him in the ring for the space of an hour, several mornings together; and if you find that he is tractable, you may then offer him the saddle; but take care you do not frighten him: this may be prevented by hanging the saddle in a situation that he may always see and smell it when the groom takes him in and out of the stable to water, &c.

When you have got the saddle on his back, make the girths fast gradually; then take it off, and place it on again two or three times, so that he may become acquainted with it; and with what he seems most shy or fearful, with that make him familiar.

Having bridled and saddled him, let him stand about an hour in the stable; then lead him into some field or open place; and, in order to inure him to the saddle, clap it with your hand, rub the stirrups against his side, sway upon them, &c. By frequently tutoring him in this manner, he will soon understand his business.

When you have taught him to walk and trot quietly with the saddle and bridle, you may venture to take his back, not too suddenly, but by degrees; first putting your foot into the stirrup (having some person to assist you, and to govern his head), and raising yourself gradually, till he will suffer you to stand with your whole weight in the stirrup. If he shrinks and is fearful, do not mount, but trot him in the ring again, using all gentleness and cherish-

ings with the voice; then try him again, and if he is willing to receive you, settle yourself in the seat, and take the stirrups. Be careful that your tackle is strong and good; for, should he spring a girth or crupper, he may roll you in the dirt.

When you are properly settled, and have received the stirrups, the person who governs his head must lead him forward about a dozen yards; then make much of him, and, if he is quiet, dismount and remount alternately; teaching him to go forward, and stop upon the restraint of the bridle hand.

Having taught him to walk and trot boldly forward, without startling at every object he sees, you may then venture to canter and gallop. By exercising him in this manner twice every day, he will soon become perfect in all his paces; and you will not regret the trouble you had in teaching him.

DIRECTIONS FOR RIDING.

If you would acquire the art of riding gracefully, and at ease, in which most gentlemen take much pleasure, apply yourself to the following short directions, and you will soon attain it:

A snaffle bridle is best for the purpose of learning to ride.

When the horse is brought out of the stable, teach him to stand steady whilst you mount; at first holding a rein in each hand, till you are acquainted with the proper use of them, and can command your horse with the bridle hand only.

You must sit firm in the saddle; the body carried upright, and the shoulders back.

The arms are to be kept close and firm to the sides; the elbows level, and in a line with the back; the knees turned in, and pressed against the saddle, and a little bent.

The legs should be carried straight down, the ball

of the foot resting in the stirrups, so that you c just bear upon them, to command your own bo and the motion of the horse.

Being thus seated, walk him round a circle, th trot, and lastly canter; always keeping the outsi hand elevated about three inches higher than t inside one, which must be held shorter, and ke firm to the side.

The inside leg must be compressed close to t horse's side, and the outside one carried a little fo ward, and projecting so as not to touch with it.

The stirrups should neither be too long nor t short; nor should persons learning to ride ever u them till they can ride well without: by this meth the cavalry are taught, and an excellent practi it is.

When you have trotted about half a dozen tim round the circle, change hands, to ease yourself a horse, by riding across it in the shape of an S.

Having obtained a knowledge of the use of t reins, in the changing of hands, and various turn learn to govern your horse with the bridle ha alone, which will at first seem rather awkward, b by practice you will soon get the better of it.

I have but this to add upon the subject, that you conform to these directions, and exercise you self in them for a fortnight or three weeks, it will settle your body and limbs to, and acquaint y with the different paces and general motion of t horse, that you will not only ride gracefully, b considerably more at ease ever after.

DIRECTIONS FOR USING A HORSE ON A JOURNEY.

Before you undertake any long journey, it is n cessary to be careful that your horse is not new taken from grass. He should be kept in the stab

a week, at least, previous to your setting out; because he will then be cleansed, in some degree, of the foulness which grazing brings on, especially if he has been at grass for any length of time; in which case a gentle purge may be necessary to assist nature in carrying it off. He will then have nothing but solid food in him, and therefore be able to pursue your intended journey with spirit, and without tiring.

When he is brought out of the stable, examine the girths and stirrup leathers; that they are strong and good, that his shoes are tight, and that he is not curbed too high, in order that as few obstructions as possible may occur on the road; for, on these things, trivial as they appear, depend much of the security, as well as the pleasure of your journey.

If all is right, make the horse stand firm and immovable till you are properly seated and have adjusted your dress.

When you would have your horse go forward, do not let him feel whip or spur immediately, but convey your meaning to him by some kind of signal, as by pressing the calves of your legs against his sides; for he is an animal so docile and governable, provided you use gentle means, that he will obey if he does but understand you.

Ride moderately the first mile or two, that his blood may not become warm within him too suddenly: you may then quicken his speed by degrees, according to the importance of your business, but so as not to overheat your horse, because the violence of such exercise will eventually set his blood a boiling in his veins; and the velocity thereof will be so great, that fevers, surfeits, eruptions of the skin, &c. will inevitably be the consequence.

You may safely permit your horse to wash his mouth at every little stream, or watering place on the road; as it will greatly refresh him, and enable him to proceed with spirit, provided you do not let him drink too much; therefore two or three gulps or swallows may be allowed him at any time I would

advise you always to contrive to let your horse drink his fill, if he is not over warm, about a mile from the town at which you intend to stop; as the water will then warm in his stomach by the time you arrive at the inn, which is far preferable to the common mode of watering in the stable.

After you have finished the day's journey, see that your horse is put into a warm stable, and is well cleaned, clothed, and washed, that the hoofs are scraped out, and that he has plenty of good sweet hay; always avoiding every kind of stuffing composed of cow-dung, clay, tar, &c. which is kept by the ostler at almost every inn, in town and country, they are of too cold a nature.

It is also a good method to moisten a sufficient quantity of bran, with any kind of grease, over the fire in a pipkin; then to put a ball of it into each foot, and to cover it with a piece of coarse cloth or tow, making it fast with a couple of splints.

ON STABLE MANAGEMENT.

Particular regard should be had to the situation and materials of which a stable is built: it should not be built with stone, as in damp or wet weather it is apt to sweat; and the continual evaporation of moisture through the walls, will make it very unhealthy for the residence of horses; insomuch that disease, and sometimes death, must unavoidably be the consequence.

A stable should stand detached from all other buildings, and no cesspool, gutter, or sink should be near it. Nothing can be more wholesome than a brick-built stable; wood may answer very well, but brick is much warmer.

The rack should be placed in such a manner, that no hay dust can fall on the horse's head: the pavement should not be raised so high at the manger as

is common, but just so that the water may drain off; for by raising the floor too much at the head, the principal weight of the horse is thrown on the hinder legs, which will cause them to swell.

The refuse of potatoes, where they are plentiful, washed clean, are excellent for horses; and may be given occasionally, by way of change, instead of corn, about a gallon at one time: they are very wholesome food; and horses that feed on them soon get into condition.

Carrots are not good for horses: they do not digest kindly, therefore are to be rejected. Turnips are very good, if given in small quantities.

The way to get a horse into condition is not by continually filling his rack with hay and cramming him with corn, as some people suppose; but by observing regularity in giving him his food frequently, and in small quantities. The hay should be tied up hard, in small pottles, or trusses, by which means there will be less waste. You may give him now and then some sweet grains, mixing a handful of salt in them, which will cleanse the intestines and destroy worms.

On the choice of a groom the perfection or imperfection of a horse in a great measure depends.

A man that is of dissolute, debauched, or irregular life, or of ferocious habits, is by no means a proper person for a groom: such a man will beat your horse in your absence, and whatever defect you discover in your horse, should not be attributed to him, but to the mismanagement of the groom.

Let the man, therefore, whom you intend for this occupation be thoroughly acquainted with his business, and a complete horseman; let him be also steady, mild, and gentle-tempered; as your horse will be most likely to thrive and become useful under the care of such a man.

ON THE GELDING OF HORSES.

It is seldom that the gelding of a colt is attended with any bad accident; it is a very simple and easy operation, so that any country farrier may do it safely, by cauterizing the extremities, and filling the scrotum with salt. But this method will not answer the purpose in a full-grown horse, especially if either of the testicles are bruised or hurt; it will then require the assistance of a skilful operator.

The horse being first cast on a soft place, open the scrotum on each side, turn out the genitals, and with a well waxed thread tie the string to stop the blood, when you may with a sharp knife cut them off.

The wound may be dressed with pledgets dipped in spirits of wine and camphor; or with the green ointment alone.

If an inflammation should ensue, and the sheath and belly swell, it must be treated with warm fomentations, and the horse kept rather sparingly; making his water milk warm, in which should be sprinkled a little oatmeal; or give him thin barley-water to drink.

ON DOCKING HORSES.

The real cause of so many horses dying after the operation of docking is the want of skill, as also proper instruments to do it with. I once saw a horse docked in the country, by laying the tail on what it called a bill-hook, and making a blow upon it with a mallet; which is very wrong, as the tendons must be very much bruised by making the blow upon the tail.

The only instrument applicable to this operation, is a proper docking knife, which should be passed through a joint, if possible, while the tail lies on the block.

The searing iron should not be flaming hot when you apply it; because the sparks which fly from it will cause an intolerable pain, which falls down to the fundament and sheath, and will probably bring away the burnt part along with it; in which case bleeding will ensue; you will then be obliged to apply it again.

The searing iron should be well polished, and rubbed very clean with a woollen cloth before it is used. When the scar is got off, wash the part with lime-water.

ON NICKING HORSES.

When the horse is cast on a soft place, with a sparp knife cut three nicks under the tail; in order that the depressing muscles may be unstrung, and the elevating ones act alone. A piece of tow dipped in powdered rosin and spirits of wine, may be placed between each nick; wrapping a bandage of the same round the whole of the tail, to prevent the application from falling out.

The best method which has yet been contrived to keep the tail in an erect posture, after nicking, is a pulley with a weight affixed to the end of the cord.

THE VARIOUS FORMS OF MEDICINE.

The usual forms in which medicine is administered to horses and cattle, are those of ball, powder, drench, clyster, ointment, and fomentation.

Balls.

The ball, or bolus, is one of the most convenient forms in which medicine can be administered. It is necessary they should be prepared a short time previous to using, as an exposure to the air renders them hard, and consequently unfit for use.

Purges.

Purgative medicines, if administered with prudence, are extremely useful. Purges are found to act differently upon various horses; some undergo them without any inconvenience, neither refusing food nor water during the whole process; whilst others become extremely languid, and will neither eat nor drink for several hours. With horses of this latter description it is extremely difficult to cause the purge to operate kindly, on account of their not drinking. In this case it is advisable to drench them occasionally with a considerable quantity of warm thin gruel, and clear the rectum of any hardened dung by back-raking. Some horses will take large doses without any effect being produced, except in the discharge of urine. It is, however, very dangerous to go on increasing the dose, since a sudden change occasionally takes place in the disposition of the intestines, and a violent and immoderate purging ensues.

On account of the horizontal position of the horse's body, it generally requires twenty-four hours to elapse before the purging medicine begins to operate; although it may sometimes commence in a shorter period. But much depends on the constitution of the horse, and whenever the usual dose does not take effect within twenty or thirty hours, it will be best in future to divide the doses into small quantities, giving portions of it every twelve hours, till the animal begins to purge, since it has been generally found to answer in this manner, when a quantity given at once has failed to produce effect.

Purges are recommended to be given in the morning, when the horse is to be allowed to fast an hour. He is then to receive about two handfuls of hay, after which the ball is to be given, which is to be followed by a horn full of warm ale or water gruel. He is then to fast another hour, when he is to be allowed a moderate quantity of hay. He should have all his drink a little warm, should be walked

about gently during the remainder of the day, and should have a warm mash of bran at night. Next day he is to be again moderately exercised till the purge begins to operate, and if the weather is severe, he must be covered with body clothes; but the stable should not be too warm when he returns.

Mr. Clater observes, "that horses kept on dry meat and full fed, with little or no exercise, require regular purging every six months, with two or three doses each time, with proper intervals between, and those horses which run in stage coaches and chaises (whose labour is often more than their natural strength is able to bear), and such whose legs are inclined to swell, all require purgative medicines; the use of which would be a means of preventing many of the diseases that attack that noble and useful animal."

Violent exercise, either before or after administering a purge, is highly dangerous, and frequently gives rise to fatal diseases.

Preparing Medicine.

Before administering medicine to animals, care should be taken that the nature of the disease has been correctly ascertained, and it is highly essential that the medicine procured should be good and genuine. Seeds should be purchased in their original state, as when once powdered they soon lose their quality. The same should be observed in buying roots, barks, and gums.

In the compounding of the following recipes, troy weight should be used, and wine measure in whatever relates to liquids.

DISEASES OF HORSES.

Surfeits.

This disease may proceed from excessive and immoderate feeding, especially upon unwholesome

food, and also hard riding; but it may in general be attributed to a suppression of the insensible perspiration.

The surfeit assumes various appearances in different subjects. In some it is manifested by dry fixed scabs all over their limbs and bodies; in others by small knots and lumps. In some by a moisture, attended with heat and inflammation, the humour being so sharp, and itching so violent, that the animals sometimes rub themselves raw; while others have no eruption whatever, and appear only lame and hidebound.

A slight eruption of the lumps may be generally removed by bleeding and diuretics; but should the horse be in high condition, a purge is the best remedy. The following proportion will be found sufficient: Barbadoes aloes 6 drachms, Castile soap half an ounce, ginger half a drachm. Mixed in a ball with sirup of buckthorn.

The food to be scalded oats or bran mashes. When the purgative has ceased to act, the following ball may be given every night for three or four nights successively, viz.: emetic tartar 4 drachms, assafœtida 4 drachms, ginger 2 ounces. To be mixed and divided into four balls.

During the time the horse is under this treatment he should be kept warm and daily exercised. If the scabs do not fall off, it will be proper to rub them with mercurial ointment.

In case the horse be lean, unhealthy, and hidebound, the following drink will be of advantage: caraway seeds 1 ounce, gentian root half an ounce, fenugreet seeds half an ounce.

These ingredients, being finely powdered, should be given in a pint and half of warm ale in the morning, and repeated every second or third day while necessary. It is proper to observe, that no drink should be boiled that contains either seeds or roots. In that species of surfeit which is attended with a moist discharge from the skin, the parts affected

may be bathed with the following lotion: blue vitriol 1 ounce, camphorated spirits of wine 2 ounces. In a quart bottle filled up with water.

This lotion to be applied daily after first washing the parts with soft soap and warm water. While this wash is applied, the horse should also be given the emetic balls mentioned above.

It occasionally happens, after a surfeit has been cured, that the hair falls off those parts of the skin where the lumps or swellings were situated, and grows again of a different colour to the rest of the body, giving the animal a spotted appearance.

The Mange.

This common but troublesome disease generally proceeds from want of cleanliness, unwholesome food, and a defective perspiration.

This is a cutaneous disease, affecting the skin, and rendering it thick and full of wrinkles; especially near the ears, main, loins, and tail. As the disease advances, these parts generally become deprived of hair; or should any remain, it stands erect like hogs' bristles. These eruptions discharge a thick yellowish fluid, and the horse suffers a perpetual itching; so that most of his time is employed in rubbing or biting himself, which disturbs him in taking his food, and causes him to lose his flesh for want of rest or quiet. This disease is highly contagious.

It is improper to bleed in this disease; the following ointment will be found efficacious: prepared hogs' lard 1 pound, sulphur half a pound, white hellebore 3 ounces.

A moderate quantity of this ointment should be rubbed well with the hand every third day over all the parts affected. Two or three applications will generally suffice for a perfect cure, provided the food be good and nourishing, and proper attention is paid to cleanliness and exercise.

The following internal medicine will prove useful during the application of the ointment: antimony 8 ounces, grains of Paradise 4 ounces. This, finely powdered, and mixed with Venetian turpentine, is sufficient to form the mass of proper consistence, must be divided into twelve balls, one of which may be given every other day.

In slight cases of the mange, an infusion of tobacco in ale grounds, will sometimes effect a cure; but in an inveterate case the following ointment is recommended, viz.: mercurial ointment half a pound, black soap 2 ounces, powdered brimstone 4 ounces, crude sal-ammoniac 1½ ounces. To be mixed up with turpentine or oil of bays.

Should a lotion be thought preferable to an ointment the following may be used with advantage: powdered corrosive sublimate half an ounce, spirits of wine half a pint, water 1 quart. To be applied every third day, and on the intermediate days the parts must be washed with soft soap and warm water.

The following may be administered two or three days before the skin is dressed, and continued while necessary: crude antimony half a pound, flour of sulphur half a pound, nitre half a pound, cream of tartar half a pound. To be finely powdered and mixed.

A table spoonful of these ingredients may be put into the horse's corn, or feed, every night and morning.

When a horse is perfectly cured of this disease, his harness and gearing must be well washed with soap suds, and rubbed over with the lotion recommended above. The stall, rack, and manger, should also be white-washed with quick lime, which in a few days may be washed off with clear water. These precautions are highly necessary, and should invariably be adopted.

The Farcy.

This disease may generally be attributed to a suppressed perspiration, and also to hot and crowded stables; and is more prevalent amongst waggon and post horses than any other; horses of this description, after being thrown into a violent sweat, are frequently ridden through brooks and ponds to wash them, or allowed to stand for some time at an ale-house door; a culpable negligence, which frequently gives rise to the farcy.

The horse appears dull, his skin feels tight and dry, and there is generally a degree of swelling in the legs, particularly the hind ones. The small glands rise up in small lumps or knots, which are at first extremely hard and sore, and are usually called farcy-buds; but in a few hours they suppurate, and throw out an unhealthy ichorous discharge. The edges of these ulcers have a cancerous appearance, as the disease advances the whole body becomes affected, and partial swellings take place, particularly on the inside of the thigh, and about the lips and nose, which last very frequently terminate in the glanders. This disease is sometimes very obstinate and difficult to cure.

As this is a very troublesome disease, which spreads rapidly, and soon affects the whole system, it is advisable to apply as soon as possible to some skilful practitioner; but if this cannot be conveniently done, the following mode of treatment may be adopted:

When the attack is confined to a single limb, and attended with great swelling and inflammation, if the horse be in good condition, three or four quarts of blood must be taken, after which the following purge may be administered: Barbadoes aloes 9 drachms, Castile soap 1 drachm. With liquorice powder sufficient to make a moderate sized ball.

This is to be given with bran mashes and lukewarm water; care being taken to place the horse where

he may have room to move about, but not to exercise him out of doors whilst the limb is in an inflamed state. The swelling part must be fomented with a warm decoction of camomile flowers; and a rowel may be introduced at the lower part of the chest with considerable advantage.

When the disease has extended, and the horse has been properly purged, the following quantity may be given in one ball: camphor 1 drachm, assafœtida 1 drachm, emetic tartar 1 drachm, ginger 2 drachms. The above ball may be given for three successive nights, and, after missing one night, repeated until the disease is removed.

When the whole system is affected by the disease, the extremities swelled, the buds numerous, and the animal assumes a haggard appearance, the following mercurial ball may be administered: corrosive sublimate 1 scruple, opium 10 grains, emetic tartar 1 drachm. With liquorice powder sufficient to make a ball of the usual size.

The horse to have a good nourishing diet, such as malt mashes, with carrots or brown sugar mixed with his corn. He must not be exposed to wet or cold, and his clothing should be warm. The dose of sublimate may be gradually increased to two scruples, should the small quantity not take effect. If the salivation be too severe, and the mouth and throat become swelled and sore, a laxative, composed of the following articles may be given: Epsom salt 8 ounces, sulphur 2 ounces. Mixed in a ball with liquorice powder and treacle.

The following purging and diuretic drink is recommended by some persons for the purpose of working off the mercurial ball: cream of tartar 1 ounce, Barbadoes aloes 7 drachms, nitre half an ounce, ginger half an ounce, aniseeds half an ounce. These to be reduced to a fine powder, and dissolved in a pint and a half of warm ale.

A horse afflicted with farcy should be separated from those in health, and when perfectly recovered,

and the season of the year will admit, a run of grass will be of great service.

Fevers.

A simple fever may proceed from various causes, such as an obstructed perspiration, arising from violent exercise and exposure to sudden colds or heats, or any other cause that tends to produce a degree of inflammation.

A fever is denoted by a loss of appetite, great restlessness (the horse ranging from one end of the rack to the other), the quick beating of the flanks, redness and inflammation of the eyes, and a parched dry tongue. He also nibbles his hay without chewing it, and is frequently hanging his head down to the ground; dungs often, but little at a time, and in small broken pieces; his urine is scanty and highly coloured; his mouth feels hot and dry, and his pulse beats high and hard.

"The best criterion of a fever in a horse," says Mr. Lawrence, "is the pulse. The best situation for feeling it is just under the edge of the jaw bone, where the facial artery passes on to the side of the face. In this situation the artery is covered by the skin only; and as it rests against the bone, its strength or weakness of pulsation may be ascertained with the nicest exactness and accuracy. When the animal is in health, the pulse generally beats from thirty-six to forty strokes in a minute. The pulsation is regular, and the artery neither feels hard nor soft, but perfectly elastic; but when under the influence of fever, the pulse is sometimes increased to more than double its natural number of beats, and the artery becomes frequently so hard and rigid as to resist the pressure of the finger, and to slip aside from under it."

The first plan to be adopted, is copious bleeding. If the horse be strong and in good condition, three or four quarts should be taken, and the bleeding

should be continued until an alteration of the pulse takes place, the hardness of the artery be removed, and the yellow or bluff coat on the surface of the blood becomes thinner.

During the existence of the fever it will be necessary to resort to such medicines as are purgative, and the following will be found efficacious: Barbadoes aloes 4 drachms, emetic tartar 2 drachms, Castile soap 2 drachms. In one ball. A second to be administered twelve hours after taking the first.

The operation should be assisted with bran mashes and lukewarm water, during which the following clyster may be administered to much effect: senna 2 ounces, boiling water 2 quarts, sirup of buckthorn 4 ounces, common oil 4 ounces. The two latter must be added after the senna has been infused and the liquor strained off.

The horse's diet should consist of scalded bran, and occasionally a handful of picked hay may be put into his rack. His drink should be rather warm, and given frequently but sparingly; his covering should be moderate; his litter kept clean; and when recovering, gentle exercise should be given.

Mr. White distinguishes fevers into two kinds; the *simple* and *symptomatic*. The latter kind usually proceeds from some external wound, or is indicative of internal inflammation, and must be treated accordingly by copious and early bleeding, with rowels and blisters. This disease is not preceded by shivering like the simple fever; nor is it so sudden in its attacks. In case of simple fever, this gentleman recommends, after bleeding, and in case of costiveness, to give a pint of castor oil, or the oil of olives, and to inject a clyster of warm water gruel. He also prescribes the following laxative drink: aloes Barbadoes 3 drachms, prepared kali 1½ drachms, castor oil 4 to 6 ounces, mint water 4 ounces, pure water 4 ounces. These ingredients mixed will serve for one dose. After the operation of this laxative, the following fever powder to be given: powdered

nitre 1 ounce, camphor 3 drachms, tartarised antimony 2 drachms. These to be mixed and given in one dose. The usual precaution of warm water and mashes, with frequent hard rubbing must be adhered to. When the fever runs high, rowels are to be inserted about the chest and belly, in order to prevent the recurrence of internal inflammation. When the disease appears to be going off, and the horse looks more lively, and his appetite returns, let him be let out in some warm situation, and have occasionally a malt mash for the purpose of recovering his strength.

Let it always be remembered, that, in every case of fever, bleeding, and clearing the intestines by mild purgatives and clysters, are of the greatest importance; and that all cordial balls or drinks, administered during the continuance of the disease, will have very injurious effects.

The Glanders.

It is difficult to ascertain the primary cause of this disease. It is, however, said to rise from contagion or improper stable management; and close and ill-ventilated stables most frequently witness its ravages. It may be produced by any thing that weakens the constitution, or the injection of stimulating or acrid substances up the nostril. Post horses and machine horses, from the peculiar hardships they endure, and the exhausted state of their constitution, are most liable to the glanders.

In the early stages of the glanders there is generally a discharge of a white glutinous fluid from one nostril, which is highly coloured and inflamed, while the other nostril is of a pale flesh colour. When in this state, there is usually one or more ulcers perceptible up the cavity of the nose; and the gland under the jaw, on the same side as the affected nostril, becomes hard and much swollen. In case of colds, the discharge is usually from both

nostrils. Sometimes also the discharge from the glanders may issue from both nostrils, and the general health of the animal continue for months unimpaired; but if this discharge proceeds from cold it will be accompanied by dullness, loss of appetite, a difficulty in breathing, or an increased pulse. When the disease becomes inveterate, the discharge is very offensive and fetid, composed of yellow or green colours, and intermixed with red or bloody streaks. When the disease is very rapid, the bones and cartilages of the nose are eroded by the malignity of the virus, and the whole frame, particularly the lungs, becomes affected; the respiration also becomes difficult, the discharge profuse, and the appetite decreases; the whole frame exhibiting a disordered and emaciated appearance. When one nostril alone is attacked, which will occasionally happen, it is most generally the left one.

The symptoms of this disease should be attentively observed; as in cases of a violent cold, both a great degree of inflammation and a swelling of the glands, and even an ulceration of the nose, will occasionally take place, which renders the horse almost similar to a glandered animal, and thus a valuable beast may be destroyed, under the mistaken idea that he is affected by that disease. In the glanders there is seldom any cough.

This disease is deemed incurable; and though some writers prescribe their far-famed receipts for its cure, it is only an imposition on the credulous, without any prospect of success. Instances have indeed occurred of the discharge being entirely suspended for a while, particularly after the animal has been at grass for some time; but the symptoms invariably return, and no authenticated instance can be found of a cure of the glanders having been effected.

Whenever it is clearly ascertained that a horse is glandered, he should be immediately removed from all other horses, and kept by himself. The rack.

manger, and all other places which he may have come in contact with, should be well scraped with knives or other sharp instruments, and scoured with soap, sand, and boiling water. This operation should be repeated, and the entire surface of these parts white-washed with a thick coat of lime and water; which, after a few days, may be washed off, and the stable used again with safety. Some writers recommend fumigations of brimstone to be used: however, these will not prove effectual without the preceding precautions. It is usual for some persons to bleed and purge the other horses that may have been in the stable, but this is quite unnecessary, and can have no effect in preventing the contagion.

Where a number of horses are kept, it is much safer for the proprietor to destroy a glandered horse as soon as possible. It is, in any case, highly improper to keep such a diseased animal, since the property of others is thereby constantly exposed to danger.

It has been observed, that one-third of the hackney coach horses in London are glandered; poor persons purchase them for a very trifling sum, and, as a horse under this disease sometimes continues to work for two or three years, they generally turn out very profitable. There is, however, not much danger of the contagion being thus propagated, since those are usually kept in a stable by themselves, and consequently never come in contact with any other horses. There is much more danger to be apprehended from the stables of country inns, since the proprietors are occasionally liable to receive horses into their stables to bait which are afflicted with this dangerous disease, and thus many people have suffered severely from an accident of this kind. A degree of caution, therefore, is necessary to be observed.

A great variety of experiments have been made by skilful and experienced farriers, but no medicine has yet been discovered as a specific for the glanders.

However, it is to be hoped, that some regimental veterinary surgeon, since they are possessed of superior advantages in having separate boxes for diseased horses, will institute a series of experiments in order to discover some effectual cure for this disease.

The Staggers.

The staggers, or apoplexy, may arise from various causes; but it generally proceeds from some irregularity in the action of the stomach. It may be occasioned by blows on the head, so as to cause compression of the brain; but it usually arises from horses having been allowed too great a quantity of food, or food of an improper nature. When a horse has been deprived of food for some hours, and been working hard, he becomes so hungry that he voraciously devours every kind of food he can come at; swallowing it quicker than his stomach can digest it; and having no water to soften it, and hasten its passage, the stomach becomes crammed, and through previous exhaustion, is unable to contract upon its contents. Thus the food soon begins to swell and ferment, causing considerable distention; and the staggers are ultimately produced.

Sometimes the digestion is much impeded for want of a sufficiency of water to drink. Instead of watering horses twice a day, those in regular work should be watered four times each day. Nothing can be more absurd and prejudicial than to suppose that water has a tendency to make horses broken-winded.

Mr. Gibson, an intelligent and experienced farrier, attributes this disease in many cases to a stoppage in the stomach and intestines, which sometimes proves fatal when not rightly understood. "These stoppages," he says, "proceed from various causes, and only affect the head when they happen to be of some continuance. Sometimes they are caused by full feeding, with the want of air and sufficient exer-

cise, especially in hot dry weather, and in constitutions naturally hot; but most usually from the quality and nature of their food, as bad hay, or any other bad provender, or rank clover, when it has imbibed moisture from the damp air, which renders them so tough that they lie like a wad, and distend the guts so as to impede their proper functions. Other things have also the same effect, as soiling horses with any kind of green herbage, such as vetches, or clover, when it happens to be grown too old and tough, and has lost its succulency, especially when it has been cut too long before it is used. Any of these may cause stoppages in the passages, and sometimes excite such disorders as by their continuance affect the head in a very strong manner."

This disease is sometimes, and very properly, called the apoplexy. In some cases the horse drops down suddenly in a state of insensibility; but in general it comes on progressively. It is first denoted by a degree of sleepiness and heaviness in the eyes, and almost a continual hanging of the head, accompanied by considerable feebleness. The horse stands dull, sleepy, and staggering; when roused, he looks vacantly around him; occasionally will seize a lock of hay, and again doze with it in his mouth; at length he drops and dies; or the sleepiness passes off, and delirium comes on, when he falls, rises again, drops, beats himself about, and dies in convulsions. In this disease there is little apparent alteration in the motion of the flanks, nor derangement in the pulse.

There is also a slight and temporary state of the staggers, called the megrims, which attacks some horses as soon as the circulation of the blood is increased by exercise. The animal in this case suddenly stops and shakes his head; if allowed to stand he generally recovers in a few minutes, but if imprudently urged forward, the fit increases so as to occasion his falling

The most experienced practitioners in the veterinary line, recommend in cases of confirmed staggers, to take at least six quarts of blood at once; and when this operation is completed, to rub a blister on the upper part of the neck, on both sides of the mane just behind the ears. The blister to be composed thus: Cantharides powdered 2 drachms, spirits of wine 2 ounces. Mixed in a phial. After which the following purge is to be given: Barbadoes aloes 1 ounce, calomel 2 drachms, ginger 1 drachm. With honey sufficient to make a ball.

The horse to have bran mashes, and water with the chill taken off to drink.

If the symptoms appear likely to become violent, the horse should be removed into an open box, and the halter-rein be tied to the centre of the ceiling or to a beam, by which means the animal will be prevented from running against the wall and bruising his head.

When the staggars arise from a stoppage in the stomach and intestines, the eyes of the animal appear swollen, his mouth contracted, breath and cough short, the abdomen is distended; he stales little, and strains much when going to dung. In this case, Mr. Gibson advises the following mode of cure:—"Let some person that has a small hand, rake the horse thoroughly, and bring out the dung from the rectum, which is generally hard, and made up in little small balls of a blackish colour, and quite dry. After this, let him have plenty of emollient oily clysters, made of mallows and such like; but in places where these cannot very readily be got, they may be made of pot liquor or water gruel.

"To two quarts of this liquor may be added a pint of linseed oil and half a pound of gruel.

"This should be given milk warm, and repeated every day, at least till his dung comes away with ease and grows soft. His diet should be the best hay scalded bran, or boiled barley, till he has been

thoroughly emptied, and for some time afterwards. At first the dung that comes away in the clysters will be in small hard balls, and sometimes along with it a putrid slime, which when discharged gives great relief; but, by the continuance of the clysters, and the open diet, the dung soon alters, and comes away in such great loads, that it appears wonderful how it could have passed through the fundament; but as soon as this happens, it brings sure relief, and a passage is made for gentle purges, which in this case are always of great use.

"Take lenitive electuary 4 ounces, cream of tartar 4 ounces, brown sugar 2 ounces. Mix them in a pint and a half of ale, the ale to be made hot, that the cream of tartar may be the more easily dissolved in it; after that the sugar, and last of all, the lenitive electuary.

"This being given in the morning upon an empty stomach, blood warm, will probably begin to work before night; and it seldom makes a horse sick, as the stronger purges are apt to do when he is full and costive, so that he will drink warm water or warm gruel without reluctance. It may be repeated three or four times, allowing always two or three days' respite between each draught, keeping him to an open diet, with proper exercise, till he recovers his usual vigour.

"By this method several horses have been cured that were much affected with convulsive symptoms, and the event plainly showed that this affection was owing to a stoppage of the ailmentary functions."

The Epilepsy.

The epilepsy sometimes proceeds from a plethora, or fulness of blood, and often from violent exercise, or surfeits, or indeed from any of the causes that produce lethargy or staggers.

When a horse is attacked with the epilepsy he reels and staggers, and his eyes seem fixed in his

head. He appears quite stupid, and stales and dungs insensibly, trembles, looks around him, and falls suddenly. Sometimes he remains immoveable, with his legs stretched out, as if he were dead, except a quick motion of the lungs and heart whilst his flanks work violently. Occasionally the convulsions which follow are slight, at other times violent. The head and fore part are most affected, and the contortions are most singular. When the fit is going off, he generally discharges a white and dry foam from the mouth. After the fit is over, he shakes his ears, stales, and eats and drinks as though nothing had occurred.

In old horses this disease generally proves incurable; since, through their weakness, little assistance can be given to the operation of medicines; but in ordinary cases, the following may prove efficacious: care being taken to open their bowels previously by clysters: assafœtida 2 drachms, emetic tartar 1 drachm, camphor 1 drachm. Which must be made into one ball, with liquorice powder and honey, and given every twelve hours. Those who prefer giving an opening drink, may administer the following twice in twenty-four hours: castor oil half a pound, tincture of opium half an ounce, prepared kali half an ounce, powdered ginger 1 ounce.

The Palsy.

The palsy may arise from high feeding and want of proper exercise. Sometimes it proceeds from hard working, without a sufficiency of wholesome food; or may be produced by falls, blows on the loins, injury in casting, and turning in a narrow stall; and occasionally it is the result of mere old age, in which case it is hopeless to attempt a cure.

When a horse is seized by the palsy, the use of some particular member is lost, sometimes one or more limbs, and especially the hind legs. When the brain is affected, the use of one side is totally taken

away, the horse falls suddenly, and the muscles of the affected parts become so flaccid and relaxed, that all attempts to rise are fruitless. This last case is called *hemiplegia.* Horses that lie out at grass or cold wet ground are frequently attacked by a numbness of their limbs; but this is rather a case of rheumatism than of palsy; since the head remains unaffected.

It very rarely occurs that paralytic disorders are cured in old horses, particularly when the disease attacks one entire side. A partial palsy in old horses may be alleviated, but not removed; since there will always remain a degree of numbness and insensibility in the parts affected. However, the disease in young horses may often be cured without much difficulty. The following purge will be found beneficial: Barbadoes aloes 8 drachms, Castile soap 2 drachms, ginger 2 drachms. Mixed in one ball. The food to consist of mashes and lukewarm water. Then apply the following stimulating embrocation: oil of turpentine 4 ounces, camphor 1 ounce, common soap 1 ounce. Let the affected part be well rubbed with the above liniment, by the hand, and, as fast as it sinks in, renew it; thus repeating it till the numbness goes off, and the horse can use his limbs. If necessary, the effect of this liniment may be increased, by adding one ounce of tincture of cantharides. The free use of a hard brush is of such service that it ought never to be neglected.

If one side of the head be affected, it ought to be well rubbed with liniment; but no internal medicine should be used.

Rheumatism.

This disease may generally be attributed to some sudden exposure to wet and cold; which have been rendered delicate and tender by being kept in the stable and warmly clothed.

This disorder, as in the human subject, may be divided into two kinds, the acute and the chronic

The first is attended with some degree of fever, but the latter is a mere local affection, being generally confined to a single limb, and some particular part of the body.

A horse attacked by the rheumatism moves the affected limb without bending the joints of it, which is not the case in most other kinds of lameness. Rheumatism is also evident when a degree of lameness subsides by exercise, and returns again when the animal becomes cool. Sometimes the shoulders are affected; but the confirmed rheumatism is usually seated in or about the hip joint, and the adjacent membranes. When the disease attacks the loins, the horse feels extreme pain, the muscles in those parts lose their motion, he loses all flexibility in his back and body, and is obliged to step short with all his legs alike. The animal never lies down, from a consciousness of being unable to rise again without great pain and difficulty.

Many skilful farriers recommend a cure by administering a purge, and afterwards applying strong spirituous mixtures; giving the horse gentle exercise twice a day, and keeping him warmly clothed. Hogs' lard 2 ounces, oil of turpentine 6 drachms, camphor 2 drachms, spirits of sal-ammoniac 2 drachms. To be mixed, and the parts affected rubbed twice each day.

After the purge which is above recommended has ceased to operate, take the following: assafœtida 2 drachms, sulphur 2 drachms, ginger 1 drachm, soap 2 drachms. These ingredients must be mixed into a ball with treacle, and repeated for three or four successive nights.

In obstinate cases a summer's run of grass would be most likely to restore the animal to perfect soundness. Warm bathing has been recommended, but this is both inconvenient, and more calculated to retard, than to accelerate a cure.

Worms.

Some have supposed that the bots are frequently caused by confinement in stables and unwholesome diet. Horses which want energy in the functions of the stomach and intestines, are the most disposed to breed the ascarides. Some have attributed them to foul feeding, which produces crudities and slimy indigested matter in the bowels, especially in horses that have been pampered for sale. Sound healthy horses are rarely troubled with these insects.

Worms are so common in horses, that very few escape at some period of being troubled with them. The most common kind are *bots* and *ascarides*.

Bots are generally found to be of a brown colour, and are observed sticking in clusters to the insensible parts of the stomach. They resemble maggots, and are about half an inch in length, and the same in circumference round the thickest part. They are furnished with two sharp feet from one end of their bodies, by which they retain a firm hold; and as the surface of the stomach where they have taken hold inflames and ulcerates, they pierce still deeper, until in some instances they penetrate quite through the stomach. When the female is properly impregnated, she carefully selects a proper subject (evidently preferring one horse to another), and deposits her eggs on the insides of the fore legs and some parts of the shoulders. These eggs are very visible, in the form of little yellow knits, which are fastened to the hair with some kind of a glutinous substance. Whenever the horse bites his legs from itching or any other cause, some of these eggs enter the mouth, and pass into the stomach, along with the saliva, where they are hatched, and become the bot. It is a most remarkable instance of instinct, that the fly never deposits its eggs on any part of the horse which he cannot reach with his mouth. Some writers suppose that worms are useful and beneficial to horses in many cases, by preventing other dis-

eases; and Mr. Bracey Clarke, who has given a most accurate and scientific description of the bots, concludes that this animal is the natural medium for their propagation.

The *ascarides* are usually found in the rectum; they are generally white, but sometimes reddish, and in form resemble the eel. They are extremely troublesome, and expose horses to the gripes and other irritating actions in the intestines. A horse troubled with these insects, will often strike his belly with his hind foot, as if griped, and look dull and fatigued. He never lies down and rolls as in the gripes, but shows uneasiness; however, in a short time he recovers, and begins to feed. His hair stares as if he was sickly, and nothing that he eats makes him thrive. The most decisive sign of worms is when they are voided with the dung.

There is another kind of worms, called the *teretes*, or earth-worms, which are sometimes found in horses, but those are neither very troublesome nor dangerous, and would scarcely be discovered were they not seen occasionally coming away with the dung. They are easily distinguished from the ascarides, on account of being a little larger, and of a red colour; and are commonly voided about the latter end of autumn.

Mr. Gibson says, "The signs of worms in horses are various, according to their different kinds. The bots that many horses are troubled with are found sticking to the rectum, and are often thrust out with the dung, along with a yellowish coloured matter like melted sulphur.

"They are apt to make a horse restless and uneasy, and to rub his breach against the post. The season of their appearing is usually in the months of May or June, after which they are seldom to be seen, and rarely continue in any one horse above a fortnight or three weeks. Those that take possession of the membranous parts of the stomach are more irritating and dangerous in causing convulsions, and are seldom

discovered by any previous signs before they bring a horse into a violent agony."

The writer quoted above, says, that horses troubled with worms may be relieved without much trouble or expense, only by giving him a spoonful of savin once or twice every day, in oats or bran moistened; and if three or four cloves of chopped garlic is mixed with the savin, it will do better, for garlic is of great service in these complaints. "Horses that are troubled with bots," says Mr. Gibson, "ought to be purged with calomel and aloetic purges before the weather grows too hot; and if they be kept to clean diet after this, it will be a great chance if ever they are troubled with them any more. As those horses that are turned out to grass often get rid of them there by the first fortnight's purging; those who have the convenience of a good pasture for their horses, need not be very solicitous about giving them medicines."

The following prescription is strongly recommended: calomel 1 drachm, aniseeds in powder half an ounce. With treacle sufficient to make a ball.

This is to be given in the evening, and the next morning the following is to be administered: Soccotrine aloes 8 drachms, ginger two drachms. With treacle enough to make a ball.

The foregoing bolus and purgative ball is ordered to be repeated after an interval of nine days, until the horse has taken three doses. Then the following powder is advised daily for about a month. This process does not require any change of diet, or involve any hazard from the effects of cold: Ethiop's mineral half an ounce, crude antimony prepared half an ounce, aniseeds in powder half an ounce. Mix them together.

The treatment of the horse during this course of worm medicine, is the same as in the usual practice of administering purges. "Some prefer," says Mr. Denny, "giving Barbadoes aloes for the removal of

worms, thinking it is more efficacious than the soccotrine; at the same time it exposes a horse more to gripes and dangerous attacks, unless it be managed with great care." Mr. Gibson recommends the following as a cheap purge of this kind: Barbadoes aloes 1 ounce, salt of tartar 2 drachms, ginger 1½ drachm, oil of amber a tea-spoonful. Sirup of buckthorn sufficient to make a ball.

Mercury is a favourite remedy against worms.

The following appears to be the best mode of using this powerful and dangerous medicine: quicksilver 2 drachms, Venice turpentine half an ounce.

Rub the quicksilver in a mortar with the turpentine till no particles of the former appear; then add oil of savin 30 or 40 drops, soccotrine aloes powdered half an ounce, ginger 1 drachm. Sirup of buckthorn sufficient to make a ball.

When the horse has gone through a course of mercurial purges, the following drink may be given twice or thrice a week, viz.—camomile flowers a handful, rue a handful, horehound a handful, liquorice root 1 ounce.

Boil these in a quart of soft water about fifteen minutes in a covered vessel, and keep it covered till cold; then strain it through a coarse canvass, and give it in the morning on an empty stomach.

Particular caution is necessary in administering mercurial purges. The horse should be kept warm, and have bran mashes, and water with the chill off.

Emetic tartar is strongly recommended for destroying the ascarides. Sulphur is also an excellent remedy; it may be given night and morning, to the quantity of an ounce. It is certain that no medicine has yet been discovered, capable of destroying, or bringing away the bots before the regular period, when they quit the horse spontaneously. But, however, propagation may in some measure be prevented by cutting off the hair with a pair of scissors where the worms are deposited, or by the frequent use of the curry-comb or brush. A run at grass, by invigo-

rating the system, contributes much to the removal of the ascarides.

Broken Wind.

All diseases in the lungs proceed from inflammation in a greater or less degree; which when violent, if not speedily relieved, end in mortification and death. However, should this be avoided, it generally lays the foundation for a permanent cough or broken wind. This may be brought on by an effusion of water in the chest, or by lymph being thrown into the air cells of the lungs, or by the destruction of some part of the lungs in consequence of the inflammation.

This disease is indicated by the breathing of the horse altering from its natural state, and from an easy, gentle, and uniform respiration, to a painful, laborious heaving, and violent agitation of the flanks: the nostrils become dilated, and the face contracted. Such are the symptoms in severe cases; but the disease exists in different degrees of mildness or violence, and is much varied by the seasons of the year, or the mode of administering food or water.

In the early stages of the disorder, the abdomen is much contracted; but in cases of long standing, it becomes large and pendulous.

Mr. Lawrence observes, that the disease of broken wind seldom comes on suddenly, but is generally preceded by habitual coughs and colds; and these are considerably aggravated by over feeding, and want of sufficient exercise.

This disorder is incurable. However, some relief may be obtained by attending to diet and management; such as feeding the animal every day with good hay, bran mashes, and scalded oats. Some recommend two or three quarts of blood to be taken, which is stated to be very useful, especially at the commencement of the complaint. Water should be given frequently in small quantities, after which a little gentle exercise will be found service-

able. A purging ball is advised to be given, after which one of the following balls twice or thrice a week: Barbadoes tar 2 ounces, Venice turpentine 2 ounces, Castile soap 2 ounces, calomel 3 drachms. Beat up together and mixed with carraway seeds 1 ounce, aniseeds 1 ounce, nitre 2 ounces. Mixed with honey and liquorice powder, and divided into ten balls. But, as before observed, no perfect cure in this disease can be expected, though relief may be afforded.

A foolish and cruel notion is very prevalent that broken-wind and other disorders of the lungs arise from drinking too much water. However, it is only necessary to refer to the horse wandering in the fields, having free access to water, to prove that no injury can occur on that account. When the horse is confined in a stable, supplied with dry food, and deprived of a full allowance of water, the digestion is injured, and the excessive heat of the stomach renders him so eager for water, that he is exceedingly apt to drink too much at one time, when he has an opportunity of so doing. But disorder in this case is occasioned by a want of water, and nothing can be more preposterous than to think of curing it by continuing in the error. Horses accustomed to dry food, and working hard, require a plentiful supply of water to keep them in perfect health, which ought to be given frequently; in which case they will never take too much at one time.

Roaring.

This may be produced by similar causes as broken-wind. Dealers attempt to discover this disease by striking the horse under the belly with a whip, and turning him round suddenly at the same time. If the horse grunts during this process, it is considered as a proof that he is a roarer.

This disease sometimes begins by a whistling noise, but when it reaches a more confirmed state, the breathing becomes deep and loud.

Crib Biting.

So called from the habit which some horses acquire of biting their manger, accompanied with a convulsive motion of the wind-pipe. It is another disease of the lungs, for the prevention of which, as well as roaring, and broken-wind, directions are given in the following article on the inflammation of the lungs; for if this disease be treated properly, these troublesome and incurable complaints will rarely ensue.

Inflammation of the Lungs.

This complaint is generally produced by cold applied to the skin, by plunging a horse in cold water when in a sweat, an exposure in a current of air in a state of perspiration, or long and violent exertion.

This complaint is generally preceded by a shivering; the animal appears dull, and droops his head, and the ears and legs are extremely cold. As the disease advances, the breathing becomes quick and difficult, accompanied by heaving and working of the flanks. The mouth feels hot, and the animal is obliged to suppress his cough on account of the soreness of his lungs. He refuses all food, and rarely attempts to lie down. This disease is so dangerous, that the most urgent means should be used to administer relief.

Immediately on ascertaining that a horse is attacked by an inflammation of the lungs, four quarts of blood, at least, should be taken at once; and if the animal be in high condition, or the difficulty in breathing require, this quantity may be increased to six quarts. A clyster should next be given, composed of four ounces of Epsom salts dissolved in thin gruel, and repeated every third hour until the bowels are freely opened; after which the following ball must be given, and repeated every twelve hours: emetic tartar 1 drachm, assafœtida 1 drachm. With liquorice powder sufficient to make a moderate sized ball, made up with sirup.

The horse should have a bran mash and water with the chill taken off, about an hour after; he should also be warmly clothed if the weather be cold. A free circulation of air is also requisite.

When the horse appears recovering and cheerful, and his appetite begins to return, the following drink is recommended: Peruvian bark 1 ounce, nitre half an ounce, ginger half an ounce. Mixed and given in a pint of rue tea.

When the disorder has existed for some time, and the horse has not been bled, if mortification does not take place, nature attempts to relieve herself by a discharge of mucous from the nostrils; during which the legs and parts under the chest usually swell. In this case bleeding is improper: the following diuretic ball may be administered with great advantage: liquorice powder half an ounce, Venice turpentine half an ounce, assafœtida 2 drachms. Made into a ball, and repeated twenty-four hours after the first ball has been given.

The horse should have nourishing food, and be well rubbed, his nostrils thoroughly cleaned with a sponge and warm water several times during the day. The rack and manger should be frequently cleaned, and the legs well rubbed, and bound with hay bands to promote warmth.

In violent attacks of inflammation on the lungs, some practitioners recommend a large blister, composed of cantharides and sweet oil, to be rubbed on each side of the chest, or a rowel introduced into the breast; but these remedies are so slow of acting, that the disease will generally prove fatal before relief be experienced from them. Bleeding and clysters are consequently the best remedies in this dangerous disorder.

Pleurisy

The pleurisy may be produced by the same causes as the inflammation of the lungs. Indeed, inflam-

matory disorders are always brought on by a sudden suppression of the perspiration.

In inflammation of the pleura, or membrane which lies in the chest, and is hence called pleurisy, the symptoms vary so little from the inflammation of the lungs, that it is difficult to distinguish. In the pleurisy, the horse shows great uneasiness, and is continually shifting about. He often strives to lie down, but immediately starts up again, and turns his head to the affected side; whereas in inflammation of the lungs, the horse is more tranquil, and never attempts to lie down. "In a pleurisy," says Mr. Lawrence, "a horse's mouth is generally parched and dry; but in peripneumony, or inflamed lungs, when opened, a roapy slime generally runs out in great abundance, besides, a discharge from the nose much in the same way as in a malignant fever, and a red or yellow serum, or coagulable lymph, will adhere to the inside of the nostrils. In the pleurisy a horse works violently at the flanks, is very restless, and his belly generally appears tucked up; but in a peripneumony, he always shows fulness, and the working of the flanks is regular, except after drinking, or when he is agitated by being disturbed by giving him medicine, in which case the heaving becomes stronger and more vehement than at other times; his ears and feet are for the most part always cold, and he often falls into damp sweats, with other symptoms common in malignant diseases, except that they come on more suddenly and with greater violence.

An inflammatory attack has sometimes been mistaken for the gripes; but the difference is easily perceptible; since when a horse is griped, he lies down and rolls about, and sometimes when violently attacked, his eyes are turned up, and his limbs stretched out as if dying; cold and clammy sweats appear; and he frequently stales and dungs, but with great pain and difficulty, until some relief be procured.

The cure of a pleurisy and an inflammation of the lungs is the same, except where accidentally symp-

toms occur to require variation. Copious bleeding is particularly necessary.

In treating on this disease, Mr. Gibson makes the following judicious observations: "As pleuritic disorders are more apt to leave some taint on the lungs than common colds or other inflammatory disorders, a great deal of care must be taken upon his recovery, that his feeding be in proper and right quantity, and his exercise well timed. A horse should be kept to a light open diet for a fortnight or three weeks, viz. a quartern of bran scalded every day, and besides that two or three small feeds of the cleanest and weetest oats sprinkled with water. Instead of the scalded bran, it will be well to give him sometimes, for a change, about a quart of barley scalded in a double infusion of hot water, that it may be softened, and the water may be given him to drink. His exercises should be gradual, and increased as he gathers strength, and always in an open free air when the weather is favourable. If there be any remains of a cough, the air, with moderate exercise, will tend greatly to remove it, and the remedies usually given in chronic affections of the chest should be resorted to. Purging is also proper after pleuritic diseases, but the purges should be very gentle. The following proportion will generally suffice: Barbadoes aloes, 6 drachms, Castile soap, half an ounce, ginger, half an ounce. In a ball with sirup of buckthorn.

"This may be given with the usual preparations necessary in purging, and it will operate well without occasioning either sickness or griping.

"This ball may be repeated at the intervals of a week, provided the horse does not appear weak after the first dose."

The Distemper

The distemper is generally prevalent in the spring of the year, and is produced by the cold easterly winds upon animals which are usually at this period shedding their winter coats, and consequently less

provided against its effect. The horses confined in hot stables are most subject to it. Some writers, however, ascribe it to the peculiar state of the atmosphere.

This disorder is attended with some degree of fever, frequently accompanied with soreness of the throat. It is also occasionally attended by a discharge from the nose. But it varies much in its symptoms, and is found most prevalent amongst young horses. It is sometimes infectious and epidemical.

This disorder is very rarely fatal if judiciously treated: but many valuable horses have been destroyed by administering cordials, which are highly injurious. As soon as the symptoms of the distemper appear, the horse should be bled, the bowels opened by clysters, and, if the animal continues costive, the following mild purge may be given: Barbadoes aloes 7 drachms, Castile soap 1 ounce, ginger half a drachm. Made into a ball with sirup of buckthorn.

With a plentiful supply of water-gruel or bran-water, the above will be found sufficient to effect a cure. Should the throat appear swelled, a blister may be applied.

The Colic.

The colic is sometimes occasioned by perspiration being suddenly checked from imprudent exposure to wet or cold, or drinking a large quantity of cold water when the body is heated by exercise; or it may be produced by eating too much immediately after fatigue, or by bad hay, new corn, or whatever is new or prone to fomentation; and sometimes it may originate in weak and delicate animals, from the formation and confinement of air in the intestines.

This disease is generally manifested by the horse's suddenly lying down and rising again; and sometimes striking his belly with his hind feet; he stamps with his fore feet: and refuses every kind of food.

When the gripes are violent, he throws up his body in convulsive motions, his eyes are turned up, and his limbs stretched out as if dying; he falls into profuse sweats, succeeded by cold shivering fits; tries to stale; turns his head frequently towards his flanks; rolls over, and often turns on his back.

When the pulse becomes small and feeble, the horse frequently lying on his back, and voiding small portions of dung like gingerbread nuts, his back-bone elevated, and his legs and ears cold, it is a certain indication that inflammation has taken place. When a mortification advances, the animal appears free from pain and easier, which is a sure prelude to death.

In all cases of the colic, clysters should be administered with as little delay as possible, and repeated every half hour until the disorder be removed or considerably relieved. Previous to introducing the clyster pipe, the hardened dung in the rectum should be cleared away.

Mr. White recommends to give, as soon as the disorder is observed, the following draught: balsam of capivi 1 ounce, oil of juniper 2 drachms, simple mint-water 1 ounce. To be mixed in one dose. Or the following: Venice turpentine 1 ounce, mixed with the yolk of an egg; adding, gradually, peppermint-water 1 pint; also, spirit of nitrous ether half an ounce for one dose.

A clyster should also be injected, consisting of six quarts of water gruel, or warm water, and eight ounces of common salt.

If the disease has continued for several hours, and the pain appear to be excessive, with a quick pulse, it will be proper to bleed to three quarts, or sometimes more, to prevent inflammation, and remove the spasmodic contraction of the intestines. The draught and clyster should also be repeated, and the belly be rubbed for a length of time with mustard embrocation. If the disease be exceeding violent and resists these remedies, which will very rarely occur, a pint of

castor oil, with an ounce and a half of tincture of opium may be given. The horse must be rubbed perfectly dry, and well clothed: and his stand filled with clean litter for a considerable height.

The following draught is also recommended by Mr. White: tincture of opium half an ounce, oil of peppermint 20 drops, gum arabic 2 ounces. The gum to be dissolved in a pint of warm water, and the whole mixed for one dose, the use of which should be accompanied with frequent small quantities of gruel, linseed tea, or any other mucilaginous fluid, and the injection of a clyster.

As this complaint will occasionally occur on a journey, the following may be wrapped up closely in a piece of bladder, and used as occasion requires, viz. Castile soap 3 drachms, ginger 1½ drachms, camphor 2 drachms, Venice turpentine 6 drachms. To be made into a ball for one dose.

To a horse afflicted by the gripes, give a clyster composed of thin gruel 4 quarts, Epsom salts 4 ounces. Repeat this every half hour; and if the symptoms do not abate give the following ball: opium half a drachm, assafœtida 1 drachm. To be made into a ball with liquorice powder and sirup.

Diarrhœa.

This disorder may proceed from a defective perspiration, from an increased secretion of bile, from too violent exertion, or from hard riding, over feeding, or eating unwholesome food; and sometimes from a morbid change in the secretion of the stomach and intestines. It may also proceed from drinking immoderately of cold water, when heated by exercise, or occasionally from worms. Sometimes it is the critical termination of a disease, in which case it proves salutary, and ought not to be suddenly checked.

This disease, though not very common, will sometimes occur. It is indicated by a constant and copious discharge of dung, accompanied with pain,

restlessness, and loss of appetite. As the disorder increases the discharge is chiefly mucous, or mixed with small hard lumps of dung, covered with a greasy matter. When this disease has been neglected, and evacuation becomes involuntary, attended with coldness of the extremities, a fatal termination will generally ensue. This disease is most prevalent in winter, or cold weather.

Both astringents and violent purges are improper in this disease. Such medicines as invigorate the intestines should only be employed.

A drink may be administered every morning for two or three mornings composed of Epsom salts 6 ounces. Dissolved in two quarts of thick gruel.

The horse should be kept warm; his diet should consist of bran mashes, oatmeal and bran, or malt, and his drink should be of thin gruel.

After the complaint has been somewhat removed, the following ball may be given every day till perfectly recovered: Columbo root half an ounce, Peruvian bark powdered half an ounce, sub-carbonate of soda 1 drachm, ginger 1 drachm.

Inflammation of the Kidneys.

This disease may arise from the kidneys being injured from an improper use of diuretics, or overexertion in drawing, carrying too great loads, or hard riding; or it may be also occasioned by a fever.

The kidney is a very important viscus in all quadrupeds, and is subject to various diseases and affections.

An inflammation of the kidney is indicated by weakness of the back and loins, the horse standing with his legs at a considerable distance from each other; the discharge of the urine is either wholly prevented, or in small quantities, and as the inflammation increases becomes bloody, and the voiding it more difficult; the extremities become cold, and cold sweats frequently break out; the pulse also is quick.

A relaxation of the kidneys will sometimes occur

without any inflammation, but this may easily be distinguished from the above by the urine being of its natural colour whilst the horse remains at rest in the stable; but as soon as he is brought into exercise, the discharge of the urine is accompanied with blood.

When it is ascertained that the kidneys are inflamed, four quarts of blood should be taken, and the following ball administered: Castile soap half an ounce, Barbadoes aloes 4 drachms, emetic tartar 2 drachms.

The food should consist of bran mashes, or cut grass, and a clyster given every four hours. The loins should also be rubbed with camphorated spirits of wine. The following liniment is recommended: tincture of opium 1 ounce, spirit of turpentine 1 ounce, spirit of hartshorn 2 ounces, linseed oil 2 ounces, oil of elder 2 ounces. Put into a bottle and shaken well together for use.

This liniment should be well rubbed on the parts affected, after they have been fomented with hot flannels, wrung out of an infusion of marshmallows; after which the part may be covered with a rag. When the disease is perfectly cured, should the season of the year permit, the horse may be put to grass.

When blood is discharged from a weakness of the kidneys, and no sign of an inflammation is apparent, four ounces of Epsom salts, or half an ounce of nitre dissolved in gruel, may be given every few hours: or if preferred, the following ball: Venice turpentine half an ounce, emetic tartar 2 drachms. Liquorice powder and sirup sufficient to make a ball. But in this case, a run at grass is the most effectual cure.

Inflammation of the Bladder.

This disease is generally produced by such causes as any way hinder or impede the free passage of the urine, or the too long forced retention of it under any circumstances

In cases of this kind, a degree of fever is evident, with frequent inclinations to pass urine, without the means of passing any, or but very little at once; and the animal presents nearly the same appearance as described in the inflammation of the kidneys.

Inflammations of the bladder are extremely dangerous, and require copious bleeding, which must be repeated according to the strength of the animal. Large clysters of warm water may be used with great benefit. The following will be found a very useful drink: linseed bruised half a pound, boiling water 2 gallons. To which add, after being cooled and strained, gum arabic 4 ounces, which must be previously dissolved in a quart of boiling water. Mix it well together for use, and give a quart of it every four hours.

The following ball is recommended to be given twice a day, should the pain and irritation appear to be considerable: antimonial powder 2½ scruples, opium powdered 1 scruple, camphor powdered 2 drachms, liquorice root powdered half an ounce. With treacle sufficient to make a ball, and given in a little gruel whilst warm.

In constrictions of the bladder, clysters of warm water, and warm fomentations, with hot flannels applied just below the fundament, will be found useful. The fomentations ought to be persisted in for at least half an hour each time, and the bowels kept open with gentle purgatives. Should those methods fail of affording relief, it will be necessary to resort to an operation, which is best performed by passing a staff up the urethra till it reaches the middle of the perineum, and making an incision upon it, through which a bougie or cathartic may be introduced, and the water drawn off; but this will be most safely performed by some experienced and skilful practitioner.

The Strangles.

This disorder would seem to have its origin in a certain kind of infection, which is transmitted by the

air of the atmosphere, and increased by the warmth and closeness of the stables or other places in which the horses are confined. It has been compared, by many writers, to the small pox in the human race, as it generally affects colts and young horses, never attacks horses more than once, and throws off something obnoxious to the constitution. The health is usually much improved after its operation.

This disease is indicated by a degree of fever, a painful cough, and a great thirst, with a difficulty of swallowing liquids, and a loss of appetite. The inflammation sometimes occurs on the inside of the jaw-bone; at other times between the jaw-bone, which is considered the most favourable situation for the tumour. Sometimes the parotid glands are affected, and swell up as high as the root of the ear; the breathing is laborious, accompanied with a considerable noise in the throat; the nostrils are distended, and the eyes appear as though they were fixed in the head. That is what old farriers term the *vives*. When this disorder discharges itself at the nose, it is called the bastard strangles, and, if neglected or improperly treated, occasionally ends fatally, by affecting the lungs and bringing on consumption.

This disorder rarely proves fatal. If colts while at grass are attacked by the strangles, nature generally effects a cure; the abscess breaks of its own accord, and the animal recovers in a few days. When the colt is affected, on being taken into the stable, or whilst breaking, should the attack be violent, and the animal strong and full of flesh, about two quarts of blood may be taken, and the following purge administered: ginger half a drachm, Barbadoes aloes 3 drachms, Castile soap 4 drachms. In one ball: but if the colt be above three years of age, another drachm of aloes may be added.

At the same time, the swelling should be fomented frequently with a decoction of marshmallows, as warm as the hand can bear, and a bran poultice also

be applied until the tumour breaks, when the whole of the matter should be pressed out, and the orifice is too small, should be made of a sufficient size, and cleaned with a sponge and warm water.

Or the swelling may be dressed twice a day with the following liniment: marshmallows ointment 4 ounces, water of ammonia 2 ounces, elder ointment 4 ounces, camphorated spirit of wine 4 ounces, spirit of turpentine 2 ounces. Mixed well together for use. After which, apply a poultice composed as follows: fenugreek seeds powdered 4 ounces, ale dregs 1 quart, linseed powdered 4 ounces. Boiled together, and thickened with rye flour, then add hogs' lard 2 ounces. The whole to be applied as hot as the horse can well bear. When the swelling becomes perfectly soft and yielding, open it with a lancet; and after pressing it gently, and cleaning it well, the orifice may be dressed with the following digestive ointment: common turpentine 4 ounces, black pitch 2 ounces, bees' wax 4 ounces, linseed oil 1 pint, rosin 6 ounces. Melt the whole in an iron ladle over a slow fire: then add verdigrease powdered 2 ounces, spirit of turpentine 4 ounces, and stir them together till cold. When this ointment is to be used, melt a small quantity, and dip a small tent of tow into it, with which the wound should be dressed once a day. If the wound appears to heal too fast it may be kept open with a skewer dipt in butter of antimony; and should any lumps or hard kernels remain, a blistering ointment may be applied to the parts for two or three mornings.

When the discharge has ceased and the abscess is healed, should the horse be not too much weakened and reduced, the following purge may be given: emetic tartar half a drachm, aloes Barbadoes 4 drachms, ginger 1 drachm, Castile soap 2 drachms. In one ball, with the usual precaution of bran-mashes and warm water.

Splents.

The splent generally attacks young horses, especially on the fore legs, and may arise from their being more exposed to concussion; the weight of the body being thrown upon them during progression.

This disease is generally apparent on the side of the shank-bone; sometimes in the middle, and sometimes just below the knee. An enlargement of the bone will frequently take place. It is sometimes situated under a ligament or tendon, and is almost invariably attended with a degree of inflammation. Before the excrescences appear that displace a tendon, the horse will be lame; but much skill and experience are requisite to discover the exact part affected. When they are seated in the middle part of the shank-bone, they are less painful and dangerous than when they are formed on the back parts of them; and when near the joints they are more productive of lameness than in other cases.

In young colts splents sometimes disappear of their own accord, being absorbed by a natural action of the vessels; but this result should never be depended upon. The most efficacious remedy is to administer a blister which is to be composed of cantharides pulverised half an ounce. Mixed with sweet oil to the consistence of treacle.

Cut the hair very close off all round the leg, and rub the blister in with the hand for about ten minutes, then tie the horse's head short to the rack, lest he blister his mouth and blemish his leg by biting it. A neck cradle will hinder the horse from reaching his hind legs; but when the fore leg is affected, it can be of no service. On the following day, dress the part with hog's lard, and walk the horse gently about for a few minutes. When the inflammation arising from the blister has subsided, the part affected must be bandaged, and the horse may be turned out if convenient.

When diseases of this sort have been of long stand-

ing, and are situated near to the knee-joints, the firing iron becomes necessary, which must first be drawn in a slight manner over the parts in close lines, and then blistering substances applied to them.

The Ring Bone.

This disease has much similarity in its nature and causes to the preceding, and is most to be feared in the large-boned heavy-legged horses. It is an enlargement of the lesser pastern bone, near the coronet of the hoof, and in general extends round the fore part of the hoof in the form of a ring. When formed more externally, and the ligamentous parts that join the hoof and the fleshy substance are affected, it is somewhat dangerous to such parts, but when they rise on the pastern, and do not spread down to the coronet, there is no danger to be apprehended. Blistering or firing are the only cures.

Stiff Joint.

This disease is generally occasioned by consequence of some accidental injury done to the joints by wounds, punctures, or similar causes occasioning the requisite lubricating fluid belonging such parts to discharge itself outwardly; and thus by the action of the air, considerable irritation and inflammation is excited.

In this case, the heads of the bones that form the joints are sometimes closely united by means of the ossific matter which in such circumstances is formed and thrown out from them.

After the first appearance of this affection, the union and closing of the punctures or wounds that may have been made in the parts should be immediately attended to, so as to prevent the discharge of the *synovia*, or as the farriers term it, the *joint-oil*, by joining their surfaces and putting them in a state of healing. When there is much swelling and stiffness, the best method of cure is to foment the adja-

cent parts of such wounds with hot bran and camomile flowers, in order to remove them; and touching the edges of the wounds with nitrate of silver or muriate of antimony. The best method to use the latter, is to apply it by means of a wooden skewer, making the points of it wet, without allowing any to get into the wounds; and afterwards covering the whole of the external surfaces with suitable dressings, thus keeping them as much as possible from the action of the air. This will prevent the use of the hot iron, which is the most prevalent method practised.

The Bone Spavin.

This disease generally attacks aged horses, and is situate on the upper end of the shank-bone of the hind leg, either below or in the middle of the hock joint. Horses with their hind legs much beat at the hock and termed cow hocked, are most subject to this affection, since the stress is increased upon that part by its angularity, which, if not speedily removed, may prove incurable. In the inflammatory state, or during the first attack of the bone spavin, the lameness will disappear for a short time after the horse has been exercised; and by this circumstance the bone spavin is distinguished from lameness in any other part of the limb, which generally increases from exercise. When bone spavins appear in old horses, they are almost incurable; but the same remedies recommended in the two preceding cases, will, in general, be found applicable on this occasion.

Strains in the Back Sinews.

Strains are usually produced by some violent exertion; galloping on a hard road, or by a blow from the toe of the hind foot, which will occasionally happen on a hard road, when the fore leg is kept too long in the ground by sticking in the clay.

This generally occurs just above the fetlock joint; but the external appearances usually point out the seat of the disease.

The inflammation ought to be removed by warm fomentations and bran poultices; and after it has entirely subsided, the following lotion may be applied: crude sal-ammoniac 1 ounce, vinegar 1 pint. Mixed in a bottle. Or the following may be used: camphor 2 ounces, strong rectified spirits of wine 1 pint. Mixed together for use.

The part to be rubbed twice daily, and a bandage dipped in vinegar bound round the leg. The horse should be kept easy. If the above lotion prove ineffectual, the following embrocation may be used with advantage: cantharides pulverised 1 drachm, spirits of wine 2 ounces. Mixed in a bottle for use.

After the above has been rubbed on the parts, the horse's head will require tying up for a few hours, as it will be found to operate as a very mild blister. The horse may have gentle exercise, but must not be used for some time after he is recovered, in order that the tendons may regain their usual firmness.

The Thorough Pin.

This usually takes place on account of some particular weakness, or relaxation in the ligament surrounding the joints; and when pressed by the finger it disappears, but returns on immediately withdrawing it.

This is a soft flexible swelling, and appears on the two opposite sides of the hock-joint at the same time; being supposed to pass entirely through the joint, thus deriving the name of *thorough pin.*

There is rarely much lameness produced by this disease; the most certain cure is blistering. The liniment composed of cantharides and spirits of wine, recommended for sprains, will generally be found sufficient for the purpose.

Windgalls.

These most commonly proceed from immoderate labour; working horses too young, or allowing them

to stand too much on uneven floors; thereby causing the fetlock-joints to remain too long on a stretch, instead of being in a state of relaxation.

These usually arise in small, puffy, swelling, or enlargements immediately above the fetlock-joints, and appear in both the fore and hinder legs, though generally the former; they are not, however, confined to these parts, but sometimes are met with in the hocks, near the knees, and in other places; existing in most cases without any degree of pain.

In slight cases, washes of the cold, strong, astringent kind, may be found sufficient to remove these complaints, but in inveterate cases, blistering or firing are the only effectual cures.

Blood-Spavin.

This generally arises in consequence of over-straining and exertion, or from bruises or other local injuries on the parts, causing considerable weakness.

It appears like a small soft swelling or enlargement of the thigh vein in that part where it runs over the inside of the hock joint, and is easily distinguished by its giving way, and disappearing, in some measure, on pressure below it and returning again on its removal.

The disease is of rare occurrence, and never produces lameness. Repeated blisters are also necessary in this case, and the only sure remedy.

The Bog-Spavin.

This disease is more frequent than the blood-spavin, and generally proceeds from similar causes.

Nearly the same symptoms are generally apparent in this case as in the preceding. It is attended with a degree of inflammation, which causes an encysted swelling or enlargement of the capsules, or the membraneous bags that contain and afford the synovia that lubricates the joints at the upper and inner side of the hock

When there is considerable inflammation, fomentation and poultices must be applied; after which blisters will generally remove the disease. But if matter be collected the whole must be opened, and the cysts with their contents sloughed away, by the use of dressings moistened with oil of turpentine and similar matters; and eschorotic substances, such as dried alum and sulphate of copper, should occasionally be put into the parts.

The Curb.

This disease usually occurs from protracted and excessive working in the field, or on the road, or from local injury done to the parts.

The curb is most common in young horses, especially such as are cow-hoofed, and appears in small swellings on the back part of the hock. It generally causes a degree of lameness in proportion to the inflammation of the parts, and which rarely gives way of its own accord.

In most cases, where curbs are not of too long standing, they may be removed by the application of blisters, or blistering liniments, but in inveterate cases, firing will be absolutely necessary.

The Coffin-joint.

This may be considered as a ligamentary lameness; in this disease the horse stands with his toe pointing forwards; thus keeping the pastern in a straight line with his leg, and taking off the tension of the ligaments which unite the coffin bone with the lower pastern bone, become ossified, when the use of the joint is entirely lost. Should the complaint exist any length of time, it is almost incurable; blisters ought therefore to be repeatedly applied, as early as possible, round the coronet until the disease be removed.

The String-Halt.

This complaint is indicated by the horse suddenly catching up the hinder leg higher than is necessary

while walking. The cause of this disease is exceedingly obscure, and it has always been considered as incurable.

Lameness in the Hip Joint.

In this disease, the horse drags the leg after him on the toe. The application of camphorated spirits of wine, or blistering liniment, is the best remedy. Lameness in this joint is frequently mistaken for lameness in the hock, but the symptoms are quite different.

Lameness in the Shoulders.

Lameness in this part is not very frequent. It is easily distinguished from lameness in any other part by the horse dragging his toe, and moving his foot in an outward circular manner at every step. A fomentation of bran and water, or camomile flowers, applied to the parts affected and those adjacent, will be found extremely useful; after which they may be well rubbed with the following: spirits of camphor 2 ounces, tincture of opium 3 drachms. Mixed in a bottle for use.

Where there is great stiffness in the parts, the following mixture will be more efficacious: oil of origanum 2 drachms, olive oil 2½ ounces, spirits of ammonia 3 drachms. Mixed and put into a bottle for use.

When there is a great loss of power in the limb, attended with considerable numbness, the embrocation below stated is the most effectual: camphor half an ounce; dissolved in proof spirit 8 ounces, solution of sub-carbonate of ammonia 1½ ounce, compound soap liniment 2 ounces, tincture of opium 1 ounce. To be mixed and made into an embrocation, and used two or three times a day.

The Grease.

Heavy horses with round fleshy legs are more subject to this disorder than any other kind of horses.

It may be occasioned by sudden changes from heat to cold, the too sudden change from a generous to an impoverished diet, and from constitutional debility. It generally attacks horses in the spring and autumn, and may, in most cases, be attributed to the want of proper cleanliness and exercise.

The approach of this disease is indicated by the horse raising his foot frequently from the ground, and evincing great pain and uneasiness when resting upon it. Swelling and inflammation of the heel about the fetlock follow, which afterwards breaks out, and discharges an oily matter of a peculiar offensive smell. When the inflammation is extended to the cellular membrane under the skin, the pain and lameness are very severe. The affected part is soon brought to an abscess, and bursting, leaves a deep ill-looking ulcer. In this disease the hinder legs are most commonly attacked, and the pain is sometimes so severe as to prevent the horse from lying down, thus causing the swelling to increase and the disease to advance.

Slight affections of the grease may generally be removed by a poultice of boiled bran and linseed powder, constantly applied and kept moist with warm water; and occasionally a mild diuretic may be administered. After the inflammation is abated, the following astringent lotion should be applied: alum powdered half an ounce, white vitriol 1 ounce, vinegar 8 ounces, water 4 ounces. Some prefer: vinegar 6 ounces, sugar of lead 4 ounces, water 1 quart. Mixed for use.

The following is much recommended by some practitioners: Goulard's extract 1 drachm, white vitriol 1 drachm, water 1 quart. Mixed.

Should the disease be of long standing, or if the horse has been before affected by it, a mild purge must be administered; but if the horse be weak, the following medicine will open the bowels, improve the strength, and promote absorption: soccotrine aloes 1 ounce Castile soap 1½ ounce, powdered ginger

half an ounce, myrrh half an ounce. These must be formed into a mass with sirup, and divided into six balls.

In very obstinate cases of grease, Mr. White recommends the following: calomel half a drachm, aloes 1 drachm, Castile soap 2 drachms, oil of juniper 36 drops. Made into a ball with sirup for one dose; and one ball given every morning.

Poultices of linseed meal, warm water, and yeast, must also be applied, in order to remove the offensive smell. When the heel does not seem disposed to heal, the astringent lotion named above should be changed for the following: yellow resin 4 ounces, olive oil half an ounce, red nitrated quicksilver in fine powder half an ounce.

Exercise on clean and dry ground is of the highest importance in all cases of the grease; and if the horse be weak, good feed, with careful grooming, is very beneficial. When the disease is subdued, a run at grass is of great service. In order to prevent a return, cleanliness and frequent hard rubbing is particularly necessary; and a horse whose legs are disposed to swell, should be bandaged after hard work, and the bandage moistened with alum and water.

"It is a general, but a very erroneous opinion," says Mr. Lawrence, "that the hair harbours dirt, and consequently promotes the disorder. But the contrary is the fact. From the hair being longer at the heels than any other part of the leg, it is clear that Nature had some particular reason for this difference; and that reason is, on a moment's consideration, self-obvious; namely, for the defence of a part which is more exposed to friction than the rest of the limb. This hair, by lying close to the skin, shields it from the action of the dirt, which, when the heels are trimmed close, always insinuates itself, and by rubbing the skin, irritates and inflames it to a considerable degree; for when the hair is cut close, that which is left does not lie smooth, but stands out

endways like a brush, and thus admits mud, and clay, and every other kind of dirt. The skin secretes a natural oily fluid, for the purpose of keeping it soft and flexible; but when it is thus exposed by trimming off the hair, this fluid is rubbed off by friction, and the skin becoming hard and dry, soon cracks, and the grease ensues.

"That this hair is a protection to the heels may be easily ascertained by laying it aside and examining the surface of the skin, which in that case will be found clear and dry, even after travelling the whole of the day through the dirtiest roads. The thorough-bred horse, it is true, has but little hair on his heels; but it should be remembred, that he is originally a native of a hot climate, where the soil is light and sandy, and free from moisture.

"Horse dealers know so well the utility of leaving the hair on the heels of horses that work hard, that they never trim their own hackneys which they ride to fairs; and coach masters and inn keepers would find it beneficial to adopt the same plan."

Should any cracks appear in the heels without any swelling and discharge of matter, the following ointment may be applied: palm oil 2 ounces, hogs' lard 4 ounces, fine olive oil 1 ounce. This must be melted by placing the pot which contains it in boiling water, and then mixing with it the acetated litharge, 1½ ounce; the whole must be stirred till nearly cold.

If the crack appears inflamed, soft poultices, made of turnips, or oatmeal, or beer grounds, mixed with goulard, may be applied for two or three days, and afterwards the following ointment: white lead powdered 1 ounce, fresh hog's lard 4 ounces. Mixed and spread upon tow. It may be secured by a light thin bandage.

Sand Cracks.

This disease may arise from various causes, such as bad shoeing, treads, over-reaches, soft or wet pastures, or a faulty conformation of the foot.

This disease is a partial division of the wall of the hoof, commencing at the coronet, and usually extending half way down the wall. When allowed to increase, it produces lameness, and an inveterate sand-crack will sometimes terminate in an ulcer, which, if not prevented, ultimately destroys the cartilages and bones of the foot. When the hoof is deformed by the ulcer or quittor, and one part rendered higher than the other, it is called a *False Quarter*. When the frog becomes diseased it is called a *Running Thrush*. An old and inveterate sand-crack penetrating between the horny and fleshy parts of the foot, is denominated a *Canker*.

That part of the hoof which is cracked must be cut down to the quick, and dressed with tow spread with the ointment below stated: elder ointment half an ounce, common turpentine 10 drachms, lard 2 ounces. Mixed and secured on the part by proper bindings.

Should the cracks reach to the bottom of the foot, a bar-shoe may be useful to take off the pressure from the heels, and preventing the springing of the quarter. A blister round the coronet will also be serviceable.

A *quitter* can only be cured by cleaning the ulcer thoroughly. Mr. Lawrence recommends a tent to be introduced in the following manner: Take a small piece of thin India paper, spread some butter or lard over it, then sprinkle about ten grains of corrosive sublimate, finely powdered, over the surface of the paper, and roll it up into as thin a roll as possible, and introduce it into the quitter as far as it will go. The horse's head should then be tied up for a few hours, to prevent him from rubbing it with his mouth, and the tent should be left within the ulcer for three or four days, at the expiration of which time it may be taken out, and the diseased part will follow it; after which it becomes a simple wound, and requires nothing more than to be kept clean, and defended from the air by a bandage round it.

A *running thrush* in the frog is frequently troublesome. All the ragged and diseased parts require cleaning away, and afterwards well washing with soft soap and warm water. They may be dressed with spirits of turpentine dissolved in water, or the following digestive mixture: tincture of benzoin half an ounce, Egyptiacum 2 ounces, spirit of turpentine 1½ ounce. Mixed.

A *canker* should also be very carefully cleaned and dressed with butter of antimony, upon which should be laid a pledget of dry tow, covered with powdered lime. This will require daily renewing until the part appears red and healthy, after which it may be dressed by the following digestive ointment: bees' wax 1½ ounce, turpentine 1½ ounce, black pitch half an ounce, linseed oil half a pint, yellow resin 3 ounces. Dissolved together: then add spirits of turpentine 2 ounces.

In preparing it for use, warm as much of it as you will require, and dip a pledget of tow into it. Should the new flesh grow too rapidly, the following caustic oil should be used: oil of vitriol half an ounce, spirits of turpentine 1 ounce. To be mixed gradually till properly united.

During this treatment the horse must be kept perfectly clean, and have occasional bran mashes: clysters should also be administered for the purpose of keeping his bowels open.

Contraction of the Foot.

A tendency to this disease is formed in some horses from the thickness and strength of the wall of the hoof. But it may proceed from some disorder in the internal parts of the hoofs, from the pavement of the stall sloping too much, hardness and dryness in the horn, and is frequently increased by the use of hollow webbed shoes, which do not fit properly on the heels

This disease is very common, usually affecting the heels, and comes on gradually It is frequently

attended with corns of a soft and red appearance, rendering the foot very tender and painful.

Many barbarous and dangerous remedies are advised for this troublesome disorder. However, the most proper to pursue, in order to stop the progress of contraction of the hoof, is to turn the horse into a straw-yard, or a soft and moist pasture, perfectly bare foot. Previous to this the hair must be cut off close round the coronet, and a mild blister applied: composed of cantharides powdered 2 drachms. Sweet oil sufficient to make it the consistence of treacle.

During the first day, the horse's head should be tied up; after which period hogs' lard may be applied to that part every third day.

Before he is turned out, currying and clothing must be gradually left off, and the hoof must be pared as thin as possible, especially at the heels, the toe shortened and the quarters rasped.

The *pumied or convex sole* is a disease just the reverse of the above, and is often produced by an inflammation of the foot, a natural thinness in the wall of the hoof, or bad shoeing. The treatment ought to be similar to the preceding case; except the quarter must not be rasped down, but the toe should be cut as short as possible. A complete cure must not be expected in either case, unless the horse is allowed to remain at grass until the disease be perfectly removed.

Fistula in the Withers.

This disorder may proceed from blows, bruises, or accidental injury on the parts; occasioned by the harness or saddle. Injuries of the bone, or whatever may induce inflammation, will produce fistula. If it arises from a bad habit of body, the cure is very hopeless.

This troublesome disorder usually commences at the top of the withers. At first it is small, but it quickly enlarges and spreads on one or both sides.

When suppuration occurs, a sanious discharge is conveyed in small channels or pipes through the cellular membrane.

Fistulas, if improperly treated, become very obstinate ulcers; it is therefore advisable to consult some skilful practitioner. He will first endeavour to ascertain the nature, extent, and direction of the fistula or pipes; and for this purpose, if there should be no danger of wounding any of the large blood vessels, he will lay it perfectly open. He will afterwards restore the surface of the diseased part to a healthy state by mild caustic applications, continued till the diseased parts are cast off, in the manner of sloughs. The following will prove serviceable; corrosive sublimate 1 drachm, dissolved in spirits of wine 2 ounces.

Three or four days after a pledget of tow has been dipped in this lotion, and applied to the part, a slough or core will come away. Should the surface appear healthy, it will only be requisite to keep it clean; and if the granulations grow too luxuriantly, a small quantity of verdigrease may be sprinkled over the surface of the wound.

The solution prescribed as follows is strongly recommended: oxmuriate of mercury 1½ drachm, sulphate of copper half a drachm, dissolved in proof spirit 3 ounces. Mixed for use, and applied once in four or five days.

Wens.

These tumours generally arise in consequence of some accident; but when apparent on both heels or elbows, they seem to be a spontaneous production.

Wens are generally a small fleshy substance, contained in a bag, and growing out of various parts of the body. They are rarely painful, grow very slowly, and though a trifling deformity, seldom cause lameness. Those swellings which are visible on the cap of the hock, and also on the point of the elbow, are generally classed among wens.

When wens are caused by blows and contusions, nothing further will be requisite than to wash the part frequently with vinegar and water, but should they be likely to suppurate, it will be proper to use warm and softening fomentations. If the thickness of the skin should retard their breaking, and they seem full of matter, it will be advisable to open them on one side with a lancet, after which some digestive ointment may be applied.

Mr. Gibson, in treating of wens, says, "I was once concerned in a case of a very fine horse that had a large wen on the lower part of his neck, near the windpipe, which was cut off with a large instrument. It grew from a small beginning, not bigger than a walnut to the bulk of a middle sized lemon, without pain or inflammation; but at last it became troublesome, and affected the motion of his shoulders. This substance, when it was cut off, appeared to be no other than a mass of fungous flesh, a little variegated in its colour, and most probably proceeded from a rupture of some very small twigs of the jugular arteries, which being enlarged by a continual afflux of the blood, caused so great an effusion of blood from several orifices, that it is with difficulty stopped by the application of actual cautery. When wens are pendulous (he observes), and hang by a small root, the best way to extirpate them is by tying them with a waxed packthread or a hair line, making the ligature tighter by degrees till the substance falls off; afterwards it may be healed with common digestive ointment, or bathing it frequently with spirits of wine or tincture of myrrh.

But when a wen is broad on its root or place of attachment, and has several origins, like cords or strings, it is then the safest way not to meddle with it. If the cure be practicable, it must be done by excision or caustic. The first dressing must be with dry tow, and afterwards with the common digestive. If much fungous flesh arise, it may be dressed with red precipitate, and where most required, the sore

may be strewed with red precipitate and burnt alum in powder, of each equal quantities mixed. If yet stronger escharotics be required, equal quantities of powder of blue vitriol, and of red precipitate may be used; or the part may be touched with a feather or pencil dipped in butter of antimony.

The Poll Evil.

This disease usually proceeds either from a blow or hurt on the head, by a horse striking his head against the manger or rack, or hanging back in his collar. It is sometimes caused by a shy horse jerking up his head against the top of the stable door. When proceeding from a peculiar habit of body, it is extremely difficult to cure.

This disease is somewhat similar to a fistula in the withers. It is an abscess formed between the poll-bone and the upper vertebras of the neck.

When an inflammation has occurred in this part of the neck it ought to be immediately stopped by the application of a blister; after which a solution of sal-ammoniac in vinegar may be applied, by means of a cloth kept continually wet.

When the skin is perfectly dry, the part affected may be rubbed two or three times a day with the following embrocation: Goulard's extract half a drachm, camphor 1 drachm, spirits of wine half a pint. Mixed. The cure will be greatly facilitated by administering a single purge in the mean time.

Should the inflammation have proceeded to suppuration, the frequent application of warm poultices, or fomentations of bran and water should be applied, and as soon as the swelling seems sufficiently ripe, (which may be known by pressing it with his finger) a seton must be introduced, which may be thus effected: introduce a needle with a proper cord at the highest part of the tumour, and bring it out at its lowest part, so that the matter may more easily drain off. The cord must be previously wet with the following mixture: corrosive sublimate half a

drachm, spirits of wine 2 ounces, and when drawn through, cut from the eye of the needle, and fastened together at both ends. Great care, however must be taken to avoid the nerves and blood vessels in introducing the needle: to prevent which it is advisable to make a small opening with a lancet, and through which a sheet may be introduced, as the needle can with perfect safety be passed through it. The seton should be drawn through a little, and wetted with the mixture every day.

When the discharge becomes thick and white, and the abscess is level with the surrounding parts, the seton may be removed, and the part washed twice a day with warm water. During the whole of this process, the affected parts should be entirely excluded from the air.

After the wound is thoroughly cleared, some of the old farriers recommended it to be dressed with the following mixture: oil of vitriol 1 ounce, spirits of salts half an ounce, sublimate powdered 2 drachms. Mix in a bottle for use.

After the wound is dressed with this mixture by a sponge or tow, and a small quantity inserted in the wound with a probe, by means of a little tow, they recommend the following scalding mixture. It is a very strong medicine; but it will, most probably, operate in destroying the diseased surface. Scalding mixture: mutton suet 4 ounces, rosin 4 ounces, tar 4 ounces, bees'-wax 2 ounces. Met them together: then add verdigrease powdered 1½ ounces, spirit of turpentine 4 ounces. Mix the whole well together for use.

This mixture is made scalding hot, and poured into the wound. The lips of the wound are then closed with three or four stitches, and bound up. It is not then meddled with for nine or ten days, when the dressing is removed, the wound washed with warm water, and the scalding is repeated. About three weeks afterwards the operation is again repeated. The wound will in general, run for three

or four weeks after the last time of dressing, after which a perfect cure will be effected.

Should the wound get foul and callous about the edge, it may be dressed with the following cleansing ointment: yellow Basilican 4 ounces, oil of turpentine 1 ounce, red precipitate powder half an ounce. Mixed.

This will be found a better and safer application to wounds than powerful caustics.

Mr. Gibson recommends the following: yellow wax 3 pounds, yellow rosin 3 pounds, Burgundy pitch 3 pounds, common turpentine 12 ounces, linseed oil 3 lbs. 6 oz. The whole to be melted over a slow fire into an ointment.

Falling of the Penis.

This complaint is caused by the total relaxation and weakness of the muscles or ligaments intended to sustain it in its natural size. It is most prevalent in draught horses that are hard wrought, or in stallions which have covered too many mares in one season.

In slight cases, the penis may be returned within the sheath, and a quantity of cold water, or of salt and water may be thrown over it repeatedly in the course of a day. The muscles may be anointed with the liniment named as follows: hog's lard 4 ounces, oil of turpentine 1 ounce. Melted over a slow fire.

Should the complaint remain obstinate, the penis should be bolstered up, and a charge applied over the back part of the sheath, sufficient room being left for the horse to make water. When the disease is attended with general debility, cordials and tonics should be applied.

Falling of the Fundament

This complaint is generally met with in horses of a weak and delicate constitution, and is sometimes the effect of a long-continued looseness, or of hard riding or driving.

This disease may be easily cured, if attended to in due time. The gut should be returned as early as possible, by pushing it up with the ends of the fingers, wrapped round with a piece of linen rag, lightly greased. Previous to returning the gut, it must be washed with a solution of alum, or white vitriol, and port wine and water; and a small quantity of either of these should be frequently injected. Should the gut appear to be inflamed, the following cooling liniment will be found useful for the purpose of anointing it: sugar of lead 1 ounce, marshmallows ointment 1 pound. Gentle purges and bran mashes must be given, in order to keep the bowels open.

The disease is sometimes so obstinate, that the protruded gut requires cutting off with a surgeon's knife, or a red hot cautery. The wound usually heals soon; it would be preferable if the horse was allowed a run at grass, or could be conveniently turned into a straw-yard for a short time.

Break or Rupture.

This dangerous disease commonly proceeds from violent exertions, heavy kicks on the belly, bad strains, and high and difficult leaps. Gibson states, that he has known it produced by too deep an incision being made in inserting a rowel. It generally occurs at the naval, or the scrotum, but more frequently at the former.

This complaint, except in slight cases, is incurable; and all that can be done, therefore, is to render the animal as comfortable as possible. If the case be recent, emollient and oily clysters, boiled barley, and malt mashes, may be given, and the part fomented twice a day with camphorated spirits and warm vinegar. Poultices formed of oatmeal, oil, and vinegar, may also be of service.

Disorders of the Eyes.

Disorders of this kind are of such importance, that it is highly essential the correct causes should be

ascertained. In some cases a plethorice state of the body has a predisposition to inflame the eye, and consequently it is frequently met with in horses of five or six years old, at which age they usually cease growing, and are, therefore, more liable to fulness of blood than at any other period. A sudden change of temperature will form an exciting cause of this disease, and the heat and foul air of a close stable may also produce it. Those horses that are kept in stables from which the light is precluded, are subject to it on account of their sudden exposure to open day. A want of proper exercise, or the alternative effects of idleness and hard work, may be the means of producing it. This disease in the horse is considered by many as an inflammation of a specific nature, totally different from any that occurs in other animals. They suppose that the constitution is affected, because a horse troubled with an inflammation of the eye, either does not perspire at all, or sweats very profusely, indicating a slow fever.

An inflammation of the eye will occasionally appear on a sudden; at other times the attack is gradual: the earliest symptoms which indicate this complaint is a swelling of the eyelids, but more especially of the upper, which can with difficulty be kept open: the eyes water, and drops of tears are perfectly visible at the extemity of the lachrymal duct, which are not apparent in the healthy state of the eye. The external transparent parts of the eye are of a black glassy appearance, and become obscure and discoloured; they sometimes appear of a dull white, at other times they seem brown or blueish. Red vessels are visible over the white of the eye, particularly at the corners, and occasionally extend to the centre. The horse holds his head down to guard against the light, during his continuance in this state. The ball of the eye and eyelids are considerably hotter than they generally are; and a small quantity of thickish matter is sometimes visible through the corner, toward the latter part of the

anterior chamber of the eye. The cartilaginous membrane can now be perfectly discerned by its projecting considerably outward from the corner of the eye.

When the disease has proceeded thus far, it will sometimes happen that it totally disappears, and returns again in a short time. The disappearance of inflammation in the eye of this animal is so sudden, that the same eye which one day appears considerably inflamed, will sometimes be perfectly clear and healthy on the following day. It will occasionally appear, and disappear periodically; and thus have some been led to suppose that it is affected by the moon, and have denominated it the *lunatic or moon blindness.* However, should the disease continue and attain the length before observed, the inflammation proceeds, and the cornea becomes gradually more obscure, or it will frequently happen that the cornea recovers the transparency, and the chrystalline humour becomes opaque.

One eye in general is only attacked in the horse at the same time; and this disease is more prevalent amongst young horses than those more advanced in years. Some state that inflammation of the eye never occurs in horses till they are broke in, or are taken up from the pastures in which they have remained from birth.

Bleeding will prove serviceable in the early stages of this disease, but except the horse be in high condition, it should not be repeated. A blister may also be applied to the head, placed as near the eye as possible; the veins at the corners of the eye should be opened, for the purpose of drawing blood from that part. The horse must be kept sparingly, and allowed only moderate exercise: the stable should be perfectly airy and cool, and should the horse's eye be very sensible, the stable should be kept dark. A purgative medicine will prove beneficial; and the horse may have some cooling liquor given frequently to drink, such as water, with nitre dissolved in it.

Rowels are recommended by some farriers, and it is stated, that considerable benefit has resulted from the insertion of setons placed near the eye.

Should the skin be dry, the following drench will be found useful: emetic tartar 2 drachms, nitre 1 ounce. The eye may be washed with the following solution: white vitriol half an ounce, sugar of lead 2 drachms, soft water a quart, compound powder of cerus half an ounce. Mix these, and bathe the eye three or four times a day. This will be found preferable to stronger stimulants, which frequently do much harm.

Mr. Gibson recommends the following: rose buds 2 drachms, infused in half a pint of boiling water; when cold, pour off the infusion and add sugar of lead 20 grains.

Mr. Lawrence states, "the following embrocation has been found efficacious in inflammatory attacks on the eye: vinegar half a pint, crude sal-ammoniac 1 drachm, water 1½ pint. Mixed. Bathe with the above mixture three or four times a day.

"In addition to the above, the following embrocation will in general be found useful: Goulard's mixture half a drachm, laudanum 1 drachm, spirits of wine half a pint, spring water 1½ pint. To be mixed together in a quart bottle. The above may be used three or four times daily."

Horses that are naturally subject to disorders in the eye, are termed *buck-eyed*, that is, their eyes are small, and the upper lid deeply wrinkled. Exercise and wholesome feeding are the best preservatives of the sight in such animals. When the chrystalline lens are suddenly affected, bleeding and blistering must be used, and the medicines before recommended. Should the whiteness be not speedily removed blindness will inevitably ensue. A cataract cannot be removed in a horse, as in a human being, by an operation.

Jaundice.

This disease is usually attended with some local affection of the liver. It may proceed from want of free perspiration, or from any thing that creates severe action, especially from the liver. Sometimes it is occasioned by high feeding, or habitual costiveness. This complaint is seldom dangerous in young horses; but a perfect cure is rarely effected in old horses, since in such cases it generally arises from the diseased state of the liver.

This disease is generally termed "the yellows." It is indicated by the eyes appearing of a dusky yellow colour; the inside of the mouth and lips also look yellow; the animal appears dull and sluggish, and refuses all kind of food; his urine is of a dark brownish colour, and when lodged on the ground seems like red blood; he also stales with difficulty, and his dung is very hard, and of a pale yellow colour. The pulse is irregular, and he is attended with fever in a greater or lesser degree. If the disease and fever increase, unless speedily removed, death will undoubtedly ensue.

A modern writer observes, that "the signs of the jaundice in horses, are a dusky yellowness of the eye, the inside of the mouth and lips; the tongue and bars of the roof of the mouth also look yellow. But it is necessary to distinguish between the yellowness of the jaundice, and that yellowness of the mouth and eyes, which sometimes happens on the crisis of an inflammatory fever, where the inflamed parts look yellow when the fever and inflammation are going off.

"When this happens after a fever, the horse generally recovers his appetite, and looks lively, and the fever leaves him, and the yellowness soon after wears off.

"But in the jaundice, the yellowness is one of the first symptoms, and generally appears in the beginning of the complaint. The horse is dull, and refu-

ses all manner of food, and the fever begins slowly; yet both that and the yellowness soon increase and proceed together. In the decline of an inflammatory fever, a horse dungs and stales freely. In the jaundice, the dung is generally hard and dry, and of a pale colour, nearly white. The urine is commonly of a dark dirty brown colour, and when it has settled some time on the pavement, it looks red like blood. He also stales with some pain and difficulty, and if the disease be not soon checked, all the symptoms will increase very rapidly."

Various are the means proposed by veterinary surgeons for the proper mode of curing this disease. Some recommend bleeding in the first stage of the complaint, especially if it should be accompanied by fever; and Gibson states, even if the jaundice be confirmed, it will be proper to bleed, and afterwards to give some laxative clyster; for in the beginning of the disease, horses are apt to be costive, and sometimes costiveness alone will bring it on. The clyster may be made of decoctions of marshmallows, camomile flowers, or fennel seeds, with some linseed oil. A decoction of madder and turmeric, with the addition of soap, may also be useful in a clyster. If the inflammation increases, which may be ascertained by the quickness and hardness of the pulse, more blood may be taken, and a pint of castor oil, or six ounces of Epsom salts may be given at intervals of twelve hours.

If the bleeding and medicine have the desired effect of reducing the inflammation, the horse generally grows settled and quiet, and begins to feed.

In three or four days the disease usually abates, and the horse recovers his appetite in some degree. The disappearance of the disease may be ascertained by his eyes beginning to look clear, and the inside of his mouth of a lively colour; but if, on the contrary, there should be a discharge from the eyes, with a swelling of the eyelids, which often occurs when the disease is near its crisis, it is evident that

more time must elapse before the animal can be said to be perfectly cured. As the bowels are generally costive in this stage of the disease, the following opening ball may be given: Barbadoes aloes 5 drachms, Castile soap 2 drachms, emetic tartar 1 drachm, ginger half a drachm. In one ball.

Swelling of the Breast.

This disorder usually proceeds from hard riding, allowing a horse to drink cold water when hot, a stoppage of the perspiration, or from foul feeding, without proper exercise.

This complaint is indicated by an enlargement of the breast, and the neck becoming stiff and incapable of reaching the ground. The horse also droops his head, refuses to eat, trembles with his whole body, and falters in his fore-legs whilst walking. Occasionally the swelling extends towards the throat, and threatens suffocation. If the swelling yields to the finger, and the impression remains, it is a sign that it is dropsical, and the disease is then called the *water-farcy.*

The cure should be commenced as early as possible with copious bleeding and the administration of clysters. The following purge may also be given: Castile soap 2 drachms, Barbadoes aloes 8 drachms, ginger 1 drachm. In a ball, with the usual precautions of bran-mashes and water with the chill taken off.

When the purge has ceased to operate, the following should be administered every two days: Venice turpentine half an ounce, emetic tartar 2 drachms, liquorice powder mixed in a ball.

The swelling may also be fomented with bran and hot water every three hours. If the swelling appears dropsical, a fleam may be struck into the skin in four or five places where the swelling hangs most, and from these a serous discharge will take place which should be encouraged by warm fomentations. However if the inflammation has been so acute as

to form matter, the abscess may be opened with a lancet in the most depending part, and the wound treated as described in the fistula in the withers.

Coughs.

The principal causes of cough may be attributed to sudden changes of temperature, especially when cold is applied to the body whilst in a state of perspiration; or it may be occasioned by entering a warm stable after the animal has been some time exposed to the cold air. It will sometimes proceed from greasy or farcy humours being lodged in the body; or it may be caused by an internal irritation.

This disease is generally preceded by a peculiar dulness and heaviness, a dryness and increased redness in the inside of the nostrils, from which an unusual secretion of mucus proceeds; a dryness of the eyes is also apparent, or occasionally an increased effusion of tears takes place. In the space of a day or two some degree of cough and difficulty of breathing is perceptible; and sometimes a considerable portion of heat and dryness of the skin accompanies these symptoms; increased thirst, and not unfrequently a loss of appetite. The cough is mostly dry at first, and will sometimes continue so; but more generally when the complaint is of some standing, the horse will cough up a frothy white mucus. The pulse is not always affected in this disease, but is usually fuller and harder than natural. A chilliness and trembling are frequently manifested at the commencement of this disorder.

When a cough has existed for a considerable period, and the horse shows no other particular symptoms of disease, but retains his usual appetite, it is denominated a *chronic cough*, which frequently terminates in broken-wind. In a cough of this description the lungs are generally affected, and there is a quickness in breathing, but the nostrils are not much distended. The cough is short and husky

causing the animal to sneeze frequently, and phlegm is discharged through the nostrils.

When the animal appears hide-bound, his appetite failing, and his legs swelling, it is evident that the complaint proceeds from a bad habit of body.

Should the attack be slight, and not much fever apparent, it will frequently be sufficient to take the animal within doors into a warm stable, and give him a warm mash, putting a cloth over him, in order that he may perspire through the night, and he will be almost recovered on the following morning. This method may also prove successful if it be adopted as soon as the chilliness or shivering is perceived.

Should the horse discharge mucus or phlegm through the nostrils in consequence of coughing, the discharge should be encouraged; since the animal is thereby considerably relieved. The following ball, given every other night, for four or five times, will generally be found useful: Venice turpentine 2 drachms, assafœtida 2 drachms, liquorice powdered 2 drachms, sulphur 1 drachm. Mixed in a ball.

The horse to have bran mashes, or carrots, if they can be procured; he should also be gently exercised, and kept moderately warm. A cordial ball given occasionally in the interval between the other balls, will be of advantage.

It may be composed thus: liquorice powder 4 ounces, caraway seeds 2 ounces, Spanish liquorice 4 ounces, aniseeds bruised 4 ounces, aniseed balsam of sulphur 2 ounces, oil of aniseeds 4 drachms, ginger 4 drachms. With honey sufficient to make it a proper consistence; to be divided into twelve equal balls.

Or should a drink be preferred, the following may be given: caraway seeds 1 ounce, grains of paradise 1 ounce, aniseeds 1 ounce, aromatic confection half an ounce, balsam of sulphur 2 ounces.

The balsam may be beat up with the yoke of an egg, and the powders mixed; the whole may be

given in a pint of warm gruel and two table-spoonsful of sugar. It should be repeated once every other day, for three or four times.

Should a considerable degree of fever accompany the cough, and the horse's pulse feel hard, it may be necessary to have recourse to bleeding before any internal remedy is given; but this must be regulated according to the urgency of the symptoms. After bleeding, a dram composed of warm ale, with a drachm or two of salts of hartshorn, sweetened with molasses, will be found an excellent remedy; after taking which, the animal should be well rubbed down and kept warmly clothed as before observed. Costiveness must be avoided throughout the treatment; for the obviation of which the following will be of service: emetic tartar 1 drachm, Epsom salts 8 ounces. Dissolved in one quart of water gruel. If a ball be preferred, or the symptoms of other diseases attend the cough, the following may be given once a week, and the cordial ball before prescibed may be given on the second day after the last dose has done operating: Barbadoes aloes 8 drachms, Castile soap 2 drachms, ginger 1 drachm. To be made into a ball with syrup of buckthorn.

In order to decrease the fever, give the following drench: emetic tartar 2 drachms, nitre 1 ounce. Dissolved in water gruel.

When the inflammation ceases, the cough generally goes off; but should it be a chronic cough, the horse must not be exposed to any violent changes of temperature; two or three months' run at grass, if the summer be warm and dry, will usually effect a cure. Should the horse be a greedy feeder, new hay or new oats should never be given to him. The following preparation is strongly recommended as calculated to produce a good effect: liquorice powder 6 ounces, aniseeds powdered 6 ounces, Castile soap 6 ounces, Barbadoes tar 6 ounces, gum ammoniac 2 ounces, balsam of Tolu 1 ounce. Mix the whole together, and divide it into twelve equal balls.

one of which must be given every other night, till the whole are used.

Tar is much recommended by some practitioners; it is given as follows: oil of aniseeds 1 tea spoonful, Barbadoes tar 1 ounce, vinegar of squills 1 ounce.

Consumption.

Consumptions may proceed from various causes; from colds imperfectly cured, or from the influence of the farcy or glanders fixing on the lungs. Hot and irritable horses are most subject to this disease, as they generally exhaust themselves by too great exertion.

Though this complaint is not very prevalent among horses, it sometimes occurs, and is indicated by a loss of vigour and strength; the animal loses his appetite and flesh soon, and frequently stales and dungs. Some survive for a considerable time, and others go off very suddenly.

As consumptions are preceded by inflammations, bleeding is necessary: after which the bowels should be gently opened by clysters and purges. The following laxative ball may be given: Castile soap half an ounce, soccotrine aloes 5 drachms, oil of caraway 10 drops. Treacle sufficient to make a ball.

The horse should be kept moderately warm, and have bran mashes and water with the chill taken off. The following ball may be administered every other night for three or four times, and then omitted for a few nights, and repeated again if necessary: emetic tartar 1 drachm, assafœtida 1 drachm, ginger 1 drachm. Liquorice powder enough to make a ball. The whole must be mixed up with the sirup of buckthorn.

This ball will relax the skin, and insensible perspiration will be promoted. Some practitioners recommend the following: emetic tartar 1½ drachm, camphor 1½ drachm, ginger 2 drachms, oil of caraway 10 drops, opium 1 scruple. Molasses sufficient to make into a ball.

During the administration of these medicines, the horse should be gently exercised every day. His food should be green if possible; and if in the winter season, carrots will form a good substitute. His oats also should be hard and sweet, and his hay of the very best quality. When he recovers, his work should be light and moderate for some time, and he should be kept in the fresh air as much as possible; and not allowed to chill whilst in a state of perspiration.

Foul Feeding.

This is properly a symptom of indigestion; and in most cases of this nature, there is evidently an acid upon the stomach.

This affection of the stomach is evinced by the horse's eating in a voracious manner, greedily swallowing substances that are indigestible, such as mortar, dirty foul litter, or even the dung of other animals. Such horses are termed foul feeders.

In the removal of this disorder, a purge should be first administered; the following will prove useful, should the horse be costive: Castile soap half an ounce, colomel 1½ drachm, soccotrine aloes 1 ounce, oil of mint 20 drops, mixed with molasses enough to make a ball.

When the operation of this laxative has subsided, the following ball may be given every other day until the disease appears perfectly cured: gentian root powdered 2 drachms, purified soda powdered 2 drachms, cassia powdered 1 drachm, treacle sufficient to make a ball.

During the course of these medicines, the horse should have regular exercise, and the stable should be kept very clean; he should also have a quantity of clean straw placed under the manger, in order that there may be no inducement for him to consume substances that are detrimental.

Loss of Appetite.

This disorder is frequently the mere symptom of other diseases, and must be treated accordingly. It is, however, sometimes the effect of weakness on the stomach, induced by the improper use of cordial medicines; and occasionally it is produced by fatigue; a want of proper exercise, or from the stomach being loaded with a course of indigestible food.

This state of disease is generally termed chronic indigestion, and is indicated by a want of appetite, and also a roughness and staring of the coat.

Should the horse have no inflammatory complaint, and it is evident that the loss of appetite arises from a weakness of the stomach, a cordial ball may be given every day, composed of caraway seeds powdered 6 drachms, ginger powdered 2 drachms, oil of olives 15 drops, molasses sufficient to make a ball. Or the following: cummin seeds 4 ounces, aniseeds 4 ounces, caraway seeds 4 ounces, ginger 2 ounces, mixed and divided into balls of two ounces each.

These balls will tend to strengthen the stomach, and renew the appetite. During their administration, it will be necessary to keep the horse clean, and regular in his bowels: he should also have food of a nourishing quality, and good clear water ought to be given him repeatedly in the course of the day, as nothing conduces more effectually to promote digestion. He should likewise be gently exercised every day in the open air.

Plethora.

This disorder is somewhat prevalent in horses, and may be said to arise from their being pampered with high living, in order that they may look well, and appear in high condition.

When a horse becomes fat, grossy, and full of blood, he is called *plethoric.* In this state the veins are full and distended; the pulse becomes full and strong, though it is occasionally much slower than is natural.

Every exertion the animal makes is done with great difficulty, and fatigue and exhaustion are soon apparent. If put to hard labour, he is soon wearied, and will sometimes die on the road, otherwise he becomes broken winded, or is attacked by the apoplexy, or an inflammation of the lungs.

Should no symptom of approaching apoplexy be visible, it is advisable to diminish the animal's diet gradually, and increase his exercise or labour regularly. Bleeding, if it can be avoided, is not altogether proper, since it has a tendency to produce the same state it is employed to check. Should the symptoms appear dangerous, similar precautions must be used as are observed in cases of the staggers or apoplexy.

The Vives.

This disease usually proceeds from similar causes as the strangles, such as catching cold, being over heated or over worked.

Though this complaint is most incident to young horses, it sometimes attacks those more advanced in years; though they may have had the strangles some time previous. It may be distinguished from the strangles by the greater violence of the cough, combined with an equal difficulty in swallowing, owing to the pain and soreness of the glands. The eyes become partly closed up, and discharge a thin watery fluid. It is accompanied with a degree of fever, and there is also much inflammation in the mouth and gums.

When the vives are caused by simple inflammation, in consequence of cold, a cure is easy to be effected; but when it is symptomatic of the *farcy* or *glanders*, it is generally incurable, except the original disease be entirely eradicated.

The simple attack of the vives may be cured by anointing the part with ointment of marshmallows, and covering the horse's head and neck with warm clothing.

Bleeding will be necessary according to the strength of the animal; and suppuration must be promoted by warm embrocations and poultices. When the swelling first appears, one or two brisk purges tend to remove it, assisted by the following lotion: sal-ammoniac half an ounce, vinegar half a pint, extract of goulard 1 drachm. Mixed for use and rubbed over the part affected.

The same internal medicine may be given as in coughs, and similar diet used; water-gruel with bran mashes, to which an ounce of nitre may be added once a day, will greatly facilitate a cure. When perfectly recovered, one or two mild purges will prove beneficial.

Suppression of Urine.

This complaint may arise from a variety of causes, as whatever has a tendency to affect the parts about the neck and bladder; particularly matters of food or drink, blows on the parts, the contraction produced by spasms of the muscles in the parts, and others of the same nature.

It is indicated by great uneasiness, irritation, and loss of appetite, with either a partial or total suppression of urine.

Clysters and mild purges should first be administered for the purpose of clearing out the bowels; after which the following may be used: camphor 3 drachms, opium powdered 1 scruple, hard soap sliced 6 drachms, nitrate of potash powdered 3 drachms, liquorice root powdered half an ounce. Cossabia enough to make a ball, which must be given once a day, in a pint and a half of the decoction below named: linseed bruised 6 ounces, acacia gum powdered 4 ounces, boil them for fifteen minutes in water 2 quarts. And then strain off the liquor for use.

And it will be highly beneficial, during the course of these medicines, to have some flannel clothes, frequently squeezed out of some hot fomentations

of herbs and flowers and applied to the parts between the legs of the horse, as near the neck of the bladder as may be. The animal should have mashes with as little water as possible, and water given sparingly to drink with the chill taken off.

Excessive or Profuse Staling.

This generally arises from bad provender, especially food injured by the effect of salt water.

It is easily known by the abundant discharge of rather pale urine, attended with coldness of the skin, and a staring in the hair of the coat. When the complaint is of long standing, great weakness of the body is produced with loss of appetite.

On the first attack of this disease, a powder composed as follows will be found of service: cinchona bark powdered 6 drachms, opium powdered half a drachm, alum powdered 3 drachms, root of bistort powdered 2½ ounces, coriander seeds powdered half an ounce. Mixed into a powder, and taken once a day in a hornful of warm gruel.

Opening mashes should be given during the continuance of the disorder; and after it has subsided the animal should be well fed, and have due work or exercise; his legs and other parts should also be frequently well rubbed.

Locked Jaw.

This disease may be produced by various causes, particularly from wounds, where the nerve is partially divided; or it may also arise from internal irritation, as from worms, which, in Mr. Gibson's opinion, are a very common cause of it. It is probable, however, that it more frequently proceeds from wounds in the foot, caused by a nail being driven into the quick; and is undoubtedly often brought on by the cruel operations of *docking* and *nicking*. From whatever source it may arise, the brain is certainly the principal seat of the affection.

This disease is one of the most obstinate and fatal complaints by which horses are affected. It generally commences with some degree of fever; and, as it increases, the neck becomes stiff, and the head fixed and immoveable, and somewhat elevated, with the head and ears erect and motionless: the muscles about the mouth are contracted, the eyes express peculiar animation and anxiety, and the haw is drawn partly over the eyeball; the nostrils are distended, the breathing becomes difficult, the jaws fixed, and the legs incapable of motion.

It is very rare that a perfect recovery from this disease ever occurs. It is, however, necessary to use some vigorous means as soon as possible. Opium, hellebore, diptalis, or fox-glove, &c. have been given in very large doses, but without any beneficial results. On account of its being a disease of the brain, trepanning has been used in some cases for the purpose of making a pressure on the brain, but though the spasm of the muscles appeared to be taken off, they returned as soon as the pressure was removed, with nearly equal violence. Mr. Ferron recommends bleeding, and immersing the animal in a warm bath at 90 deg. Fahrenheit, so as to keep the whole body covered with the water for two or three hours, which he has known to be successful; but the horse must afterwards be clothed and kept very warm. The most probable means, however, that can be adopted to relieve the animal, are by giving opium in large doses as a clyster, frequently repeating it, also rubbing the whole body frequently with oil of turpentine and tincture of cantharides. Mr. Blaine recommends a clyster composed of a strong decoction of poppy heads, with two ounces of camphor dissolved in brandy; or if this be thought too expensive, one with two ounces of spirits of hartshorn, and four ounces of oil of turpentine, mixed with two or three yolks of eggs, and a pint of ale. Mr. Moorcroft recommends the cold bath, or the copious effusion of cold water. A German physician has very recently dis-

covered that the carbonate of potash and opium produce a wonderful good effect in cases of *tetanus* in human beings, and it is therefore deserving a trial in the same fatal disorder in horses.

Mr. Wilkinson, a very skilful veterinary surgeon in Newcastle-upon-Tyne, has published a valuable work, wherein he describes at large his method of treating this disease, and the cures he has effected by it. We briefly insert a few observations, but the author's own work must be consulted by those who wish to examine more minutely his practical remarks and interesting illustrations.

As a horse is generally very costive in this disorder, Mr. Wilkinson advises to give a purgative drench, composed as follows: Barbadoes aloes 8 drachms, soap 4 drachms, ginger 3 drachms, treacle 2 ounces, oil of aniseeds 30 drops. The aloes, soap, and ginger, to be beat well together and made into an electuary with the treacle and oil of aniseeds, and the whole afterwards mixed in a pint of warm water. This is a sufficient dose for a middle-sized saddle horse.

As the stomach and intestines in this complaint are not very susceptible of being acted upon, the following clyster is recommended at the same time: olive oil 8 ounces, water gruel warm 2 quarts.

If the horse is in a plethoric state, and his pulse and respiration have become much hurried, a moderate quantity of blood may be drawn from the jugular vein; and this operation must be repeated according to circumstances.

Mr. Wilkinson advises the diet to consist of thin bran-mashes, oatmeal gruel mixed with milk, or a little good clover when the jaws are not too much shut. The muscles of the head, jaws, neck, and back to be rubbed with the following liniment: oil of turpentine half an ounce, water of pure ammonia half an ounce, mustard powdered 2 ounces, olive oil 2 quarts.

Immediately after applying this liniment, cover

the body with sheep skins, as recently taken off the sheep as possible; the skin to be innermost. This eminently tends to increase the circulation, and consequently to relax the muscles. Great care is necessary lest the perspiration be obstructed by cold.

When sheep skins cannot be procured, a blister may be applied the whole length of the spine, the hair being previously clipped off. If the disease has made much progress, apply a blister also over the skull, and about eight inches backwards on each side of the neck, in the direction of the vertebræ.

The following formula is given for the blister: cantharides powdered 1 ounce, euphoribum powdered 2 drachms, oil of turpentine 1 ounce, hogs' lard 6 ounces.

When the blister has ceased to operate, and the swelling occasioned by it has subsided, begin the use of the liniment and sheep skins.

Mr. Wilkinson has also found powerful antispasmodics, given after the purgative drench has done operating, very serviceable.

The following is recommended: crude opium 1 drachm, camphor 1 drachm, assafœtida 2 drachms. Dissolve the opium in water, and the camphor and assafœtida in spirits of wine: then add aniseeds powdered sufficient to make a ball.

Great care is required in giving this ball when the jaws are much shut. The ball should be given in small pieces on the end of a piece of whalebone or cane, or the ball may be dissolved in a pint of decoction of rue, and given as a drench morning and evening with a small horn. Considerable time and care should be taken in administering this medicine, lest part of it be lost, or the convulsions increased.

Immediately after the ball or drench has been given, dissolve one of the same balls in three pints of decoction of rue, and give it as a clyster morning and evening. The decoction is made thus: rue three handsful, water three quarts, boiled down to two quarts and strained off.

Great attention is requisite in increasing or diminishing the quantity of opium, according to the violence of the spasms, and the effects it is observed to produce in the system.

If the clysters act too powerfully as an astringent, this may be counteracted by adding to each four drachms of common soap: and if the bowels become obstinately costive, repeat the purgative drench at intervals of about a week. If the muscular system is found very rigid, or the horse lies down, this writer advises to have him slung, which will also facilitate the administration of medicine.

In case the disease has completely locked the jaws, both the medicines and food must be administered in the form of clysters. The quantity of medicine in each clyster must be considerably more.

Mr. Wilkinson disapproves the amputation of the injured part of the tail, when the disease originates from docking: nor is he favourable to incisions or caustics when the disease arises from a wound in any other part of the body. He prefers warm fomentations, dressings of digestive ointment to the wounded part, and, above all, strict attention to internal medicine.

Wounds.

The proper treatment of wounds, in general, is undoubtedly a branch of the first importance in the practice of farriery; yet very few understand it perfectly, and many absurd and injurious opinions are entertained respecting them. It must depend principally on the parts where the wounds are inflicted, and the form of the instrument by which they were produced, in order to state a judicious method for their treatment. A clean cut made in the muscular parts is speedily cured by applying small slips of sticking plaister as soon as possible, by which the edges of the wound may be kept close together; or if plaister cannot readily be applied, a stitch or two may be taken through the edges of the wound, and

thus the strings will be tied gently together. When the edges adhere, the strings must be cut away, and the holes which are caused by them will soon close. Should any blood vessel be considerably wounded, it would be necessary to secure it by a ligature, if possible, rather than by the application of any styptic substance. It is essential that all wounds should be duly cleaned before any attempt is made to heal them. The wound is sometimes so situated that there is no possibility of sewing it up; but generally in these cases silver or steel pins may be passed from the edges at about an inch apart from each other, and a thread twisted crosswise from one end to the other, in order to form what is termed the *twisted suture.* In every case where *sutures* are used, it is requisite that a sticking plaister should be applied over the edges of the wound. Should the wound not heal by these methods, a formation of matter will occur, and the sore must be afterwards treated as a common ulcer, care being taken that its edges are always kept as near together as possible, by the application of a bandage or sticking plaister.

When the tendon is wounded, it is proper to foment it with warm fomentations of bran and water. Spirituous applications and violent caustics are generally improper. Should the wound not heal sufficiently quick, it may be touched with the butter of antimony on the point of a feather, and the surface covered by a large pledget of tow, with digestive ointment, and bound on with a bandage.

Wounds in the joints, though apparently trifling, are sometimes dangerous and difficult to cure. The cautery applied slightly to the surface, though somewhat severe, is undoubtedly the shortest and most effectual mode of relief. Where this is not used, the wound should be excited by the butter of antimony as before observed, and when healed, a pledget of tow dipped in the following lotion may be applied: vinegar half a pint, goulard's extract 1 drachm. To be mixed in a quart bottle, and afterwards filled up

with water. The pledget to be bound moderately tight with a flannel bandage.

Should the wound be very deep, a poultice of bran may be used for two or three days. It is best applied and kept on by using the leg of an old worsted stocking, which may be drawn over the knee, and tied both above and below, but it should not be too tight. Afterwards the following dressing will be found useful: digestive ointment 2 ounces, verdigrease 2 drachms.

In cases of gun-shot wounds, it is advisable to bleed the horse. Probing should be used as sparingly as possible; but the wound may be laid open for the purpose of extracting the ball. If the ball has penetrated very deep, it is best to leave the working of it out to nature. All unctuous applications which encourage the growth of fungous flesh must be avoided, and the wound dressed with turpentine mixed with honey, or the yolks of eggs. If proud flesh arises, a little red precipitate may be mixed with the ointment. In the mean time, opening and cooling medicines will be of great service.

Venomous Bites and Stings.

The bite of a viper or adder may be cured, if early attended to, by rubbing the affected part, or the whole limb, for a considerable period with warm salad oil; repeating it two or three times a day. If the following liniment can be procured in a short time after the bite, it will be far better and more effectual in arresting the progress of the venom: water of pure ammonia 1 ounce, tincture of opium 1 ounce, olive oil 2 ounces, opodeldoc 1 ounce. Mixed. This tincture will also be found excellent in cures of stings by hornets or wasps. If internal medicine is requisite, the following may be given: salt of tartar 2 drachms, mithridate 1 ounce. Dissolve them in a pint of rue tea, and then add salad oil 4 ounces. To be given about milk-warm.

The opening drink recommended in the following

article may also be given, should any symptoms of fever be apparent.

Bite of a Mad Dog.

The most effectual method of cure, and the only one that can be depended upon, is instantly to cut out the part bitten, and afterwards to cauterize it with a hot iron. The following internal medicine may be given, and the adjacent parts also rubbed with it; garlic heads powdered 3½ ounces, rue leaves powdered 3½ ounces, pewter powdered 2½ ounces, oyster shells prepared 3½ ounces, satin leaves powdered 2 drachms. To be given to a full-grown animal in a quart of warm ale, and repeated every third day for three times; and afterwards the day before the moon is full for three successive times.

After the above, the wound may be dressed with ointment composed as follows: common turpentine 3 ounces, black pitch 1 ounce, yellow resin 6 ounces, bees' wax 3 ounces, linseed oil 1 pint. Dissolve them together over a slow fire; then take it off, and add spirits of turpentine 4 ounces. Put the whole into a pot, and stir it till it begins to set.

If any feverish symptoms appear, administer the following drench: Peruvian bark half an ounce, castor oil 8 ounces, mithridate 1 ounce, aromatic spirit of ammonia 1 ounce. Mixed in a quart of warm gruel. This drink will be found excellent, and may be given once or twice a day as necessity requires.

The following is recommended by old farriers as a cure for the bite of a mad dog: native cinnabar 25 grains, musk 16 grains, factitious cinnabar 25 grains. To be given in a glass of arrack three nights together, and the night preceding the full of three successive moons.

But, as before observed, no dependence can be placed on specifics; and if the part bitten cannot be cut away, it is advisable to destroy the animal

immediately, as other remedies may prove fatally deceitful.

The Tooth-ache.

Mr. Richard Lawrence remarks, that this complaint proceeds from the canker in the grinders: the best cure in this disease is immediately to punch out the affected grinder or tooth. The canker is generally owing to the bridle being rusty, and may easily be known by the little black botches, or brown specks which appear on the tongue, or other parts of the mouth. If not caused by the bridlebit, like the scurvy in the human frame, it proceeds from bad diet, or may be deemed hereditary, and then it appears in small white specks, and will in time, spread nearly over the whole of the mouth, and occasion irregular ulcers. The following gargle mixture will be found in this case an effectual cure: bole armonic half an ounce, burnt alum 1 ounce, common salt 1 ounce, wine vinegar half a pint. Mix and shake the whole in a bottle for use.

With this mixture the horse's mouth should be dressed every morning and evening in the following manner.

Take a small cane or piece of whalebone, half a yard long, and tie a linen rag or piece of tow, round one end; then dip it into the mixture, and pass it up his mouth and gently run it over all the affected parts; let him champ it well about his mouth, and fast about an hour afterwards.

Having thus observed the most prevalent and important diseases to which horses are liable, and explained the various approved methods of treatment, we shall therefore now proceed to give some plain and practical directions on the best mode of performing some of the most useful and common operations in farriery.

Shoeing.

Shoeing is a very important operation, in which various improvements have been effected in modern

times. Mr. Lawrence makes the following sensible observations on the process of shoeing: "In England one man alone holds the foot and pares the sole, and nails on the shoe without any assistance whatever, while in France the same operation requires two; one man holding the foot, whilst the other affixes the shoe.

"In driving the nails, the French blacksmiths pursue the opposite course to that adopted by the English, as they do not drive them near so high as the latter, but they introduce them much nearer to the edge of the sole, and drive them so obliquely outwards that the points come out at about three quarters of an inch above the shoe. By this method the nail has hold of a much thicker portion of the horn, and is equally firm, if not firmer than if it were driven higher up, and is certainly less liable to produce inconvenience in the upper or more sensitive part of the foot.

"To prepare the foot for the application of the shoe, the following plan should be pursued, provided the hoof be of its natural form and in a healthy state, viz. to pare the wall just sufficient to make it level; to pare the sole as much as will be necessary to remove the dead surface which endeavours to detach itself by scaling off spontaneously; the frog to be cleared of its ragged edges, the heels not to be scooped out nor notched in any way whatever. In performing this operation it has generally been customary to use the buttress, but even the most skilful hand has not that command over it as is necessary to regulate the exact quantity of surface that ought to be taken away. This difficulty may be obviated by the use of the drawing-knife; but the extent of its use should be limited to the rules just mentioned. The wall of the foot returns inwards from the heel to the point of the frog, forming what is termed the bars or binders. These bars inclose the posterior points of the sole, and completely separate them from the frog. They constitute, in fact, the same division as

takes place in the cloven foot of the ox and other animals of that tribe, except that the cleft does not extend above half way through the foot. If suffered to grow down to the ground, as in their natural state, they take a considerable share of the weight of the body from the wall and frog, and they likewise afford great protection to that part of the foot, by being harder than the sole, and more capable of resisting injury. But blacksmiths in general appear to be totally ignorant of the use of the binders; hence they generally cut them away, and even make a considerable notch between them and the heels, an operation which they term "*opening the heels*," but which ultimately produces the opposite effect.

"The frog is a very necessary part, and was evidently intended by nature to bear some share of the pressure thrown upon the foot. It fills up a large hollow space between the heels which arises in that part of the concavity of the coffin bone, and is a strong defence to the tendon of the foot, at a part where it is evidently exposed to much danger of injury from hard or dry substances.

"In its sound healthy state, it is generally almost as hard as the sole, and assumes the form of a wedge. It thereby gives stability to the foot, and serves as a basis to the flexor tendon of the legs, and assists the elasticity of the posterior part of the hoof. But the common method of paring it away even to the quick frustrates completely all these intentions of nature, and being also kept very high above the ground by thick-heeled shoes, it is deprived of that degree of pressure which it is intended to bear, and becomes soft from the accumulation of the natural fluid which it secretes in great abundance, from the fatty substance which lies immediately above it.

"This superabundant accumulation of fluid at length makes its escape through the fissures of the frog, and acquires, by exposure to the atmosphere, a fetid smell, and an acrimonious quality sufficient to corrode the adjacent parts.

"In this state the frog becomes so sore and tender as not to endure pressure without a very painful sensation. But the mischief does not terminate there, for as the frog very probably contributes some share in keeping the heels at a proper distance from each other, its means of accomplishing that object must naturally be reduced in proportion as its size is diminished. A diseased state of the frog may however occur even in a state of nature, as appears sometimes in the feet of colts at grass, and which have never been shod. But this rarely happens except where the wall of the hoof is exceedingly strong, thereby preventing the heels from being sufficiently worn down, so as to bring the frog into contact with the earth. Soft and wet pastures likewise contribute to produce this diseased state. Previously to shoeing, the ragged edges of the frog may be cut away, but no greater quantity of it should be removed under any pretence whatever. In order to save trouble, it is customary with blacksmiths to apply the shoe hot, and to burn down the hoof until it fits the shoe. This system is very pernicious, and should never be suffered by any one who sets any value on his horse's feet, for it causes a great evaporation of moisture, and consequently renders the bone dry and brittle, and less capable of holding the nails in their respective situations. The shoe for a perfect formed hoof, should not be above three quarters of an inch broad. It should be of the same thickness throughout, both at toe and heel, whereby it will the nearer approach to the natural position of the foot upon the ground. It was the practice for some time, at the Veterinary College, to make the heels of the shoe extremely thin, with the view of bringing the frog to the ground, and thereby to give it that degree of pressure which is necessary to its healthy state. But although the intention was good, the means were founded on a very erroneous principle, as must be self-evident on a moment's consideration. If the toe of the shoe be made double or treble the thicknes

of the heel, it must have the effect of throwing the foot completely out of its natural position, by raising the toe and lowering the heel. The consequence of this unnatural position must be to increase the angle of the pastern joint, and to keep the tendons more upon the stretch, and thereby to produce great fatigue and inconvenience to the muscles of the leg.

"The shoe should be perfectly flat and of an equal thickness from toe to heel. It is customary with English blacksmiths to make a furrow all round the under surface of the shoe, for the purpose of admitting the heads of the nails to a level with it. This is called "*fulling.*" The French blacksmiths do not adopt this plan, but leave the surface of the shoe quite smooth and equal; instead of the "*fuller*," they make holes with a punch sufficiently large to bury the head of the nail, and this is certainly a better practice than the other; because the "*fuller*," leaves two sides of the head of the nail exposed to any hard substance that the foot may strike against in going, and the nail is thereby more liable to be drawn than when its head is equally defended all round. It also leaves a greater substance of iron to the shoe, and consequently prevents its being worn away so rapidly as in the other instance. The shoe has not so neat an appearance, but that is a matter of little consequence when set in the scale against the advantage of the French method.

"An ordinary saddle horse will require a weight of shoe and nails from twelve to fourteen ounces; but a moderate sized coach horse will require from eighteen to twenty ounces"

Casting.

There are many tedious and painful operations which are necessary to be performed, and would be very difficult, or almost impossible to execute, if the animals were at perfect liberty to offer resistance. It is, therefore, requisite that we should be entirely master of him, and throw him upon the ground, in such

a situation that he may not be injured thereby. This operation is termed *casting*; for the performance of which we shall proceed to give every necessary information.

In the first place, a thick bed of straw or litter should be provided, of about eight feet square, in order that the animal may not be injured in the fall. Should the stable be capacious enough to allow the bed being arranged there, it will be preferable, since during the time of preparation which is necessary for casting, the parts operated on will not be so much exposed to the air in the stable as out of doors.

However, should there not be sufficient room in the stable, a place may be prepared in the stable-yard, or in some adjoining park or field.

The animal being led on one side of the bed; a leather strap, with a buckle attached, and an iron ring fixed to it, at a proper distance from the buckle, should be secured round the pastern of each leg, in such a manner as the rings of the strap that are round the fore feet may be directed backwards, and those of the straps placed on the hind feet opposite to them; the buckles also pointing outwards, for the purpose of preventing any injury occurring to the animal. A strong cord of ten or twelve feet in length, should be attached to the ring of that strap which has been placed on the fore-foot on that side of the animal which is the greatest distance from the bed: from this ring it is to go through the ring on the hind-foot on the same side, from which it passes through the ring on the other hind-foot, then through the ring on the other fore-foot, and ultimately through that to which it was first fastened. The animal being thus secured, a number of men should be placed beside him, so that he may be between them and the bed, while others should stand on the contrary side. Having thus arranged, those persons placed near the animal should take the end of the rope, and draw gradually, in order that the four feet of the animal may be brought as near together as possible.

After this is performed, the persons placed on the other side, one at the head of the animal, another at his chest, a third at his haunches, a fourth at his tail, &c. should pull the animal towards them, and thus its fall will be completed with safety.

It may be necessary to remark, that those persons who pull the rope, and the others who receive the animal on the bed, should not act at the same period; as were they to do so, the shock might be so sudden and violent as to cause some injury, either to the individuals or to the animal. It should also be observed, that the animal must be cast so as the part requiring the operation may be perfectly in view by the operator, and within his reach.

After the animal is thus secured, his head should be held down, his eyes covered, and the cord also must be fastened with a knot at the first ring, to afford greater security.

There are many points necessary to be observed in the casting of an animal, which depend on the operation intended to be performed on him; but these will be described when we treat of the various operations.

Firing.

Firing is the application of a certain heated metallic instrument, termed a cautery, to various parts of the body. The instruments are formed of various shapes, according to the purpose for which the operation is intended to be performed; a description of which will be found in the following instances in which firing may be applied to great advantage.

It is used for the purpose of opposing the progress of mortification. In which case a cautery in the shape of a knife, with a blunt edge and a thick back, is generally used. This form also answers for many other cases. Several instruments of a similar kind should be prepared, so that when one is too cool, another may be ready of the proper temperature. In the application of the iron, the parts adjacent to

the mortified place, should be passed over with the edge of the instrument in numerous parallel lines, in order that the heat may penetrate to the living parts, and a degree of healthy action may thus be produced, by which the mortified slough may be thrown off. When the application of the iron has been continued for some time, according to the nature of the part, and the extent of mortification, cover the wound with a pledget spread with some stimulating ointment.

Firing is also employed for the purpose of bracing the skin, and strengthening the sinews. A similar instrument as is above described is likewise used on this occasion, but its heat must be somewhat greater. It is usually applied by passing the edge lightly and quickly over the skin, describing parallel lines from one end of the part to the other. A blister is occasionally applied after firing, as some suppose that the good effect produced by the iron is thus increased. When firing is necessary on the hind legs, or on any other part where the operator would be liable to injury from the horse's kicking, the legs should be confined by means of fetters.

This operation has sometimes been found useful in spavins, ring bones, old callous swellings of the back sinews, and in wind-galls; and in those cases the irons are used as already observed. Some farriers apply a blister in these cases before firing, in order that the swelling may be reduced; under a supposition that firing, if employed without this precaution, might tend to fix the swelling and render it incurable.

Firing is frequently used by way of a styptic, in order to stop or check profuse bleedings from accidental wounds, and the iron employed for this purpose has usually a pointed extremity, except in a case of docking, where the iron is generally made in the form of a ring.

Firing will also be found useful in wounds of the joints, or other circumscribed cavities, in which case

it is employed with the view of promoting a kindly circulation, and consequent granulation of healthy flesh. Mr. Coleman has thus employed it with much success.

Firing is likewise one of the most certain remedies in these superficial ulcers that accompany farcy or glanders in the horse; and indeed, the use of the hot iron will be found the only effectual means to prevent the fatal effects which often result from the bite of a mad animal, if properly applied after the bitten part is cut out. The instrument employed in every case should be very thin and fine.

Docking.

The manner of performing this operation is thus ably described by a modern writer: "First feel with your finger and thumb for the third joint from the setting on the horse's tail; then raise up all the hair and turn it backwards, then, taking a very small cord, and wrapping it about that joint, pull it pretty tight.

"But, previous to going on with the operation, it will be necessary to take the precaution of securing the animal so as to prevent him from committing any injury to the operator. This may be done by putting a twitch on the nose, and, at the same time, tying up one of his fore legs. As soon as this is properly arranged, the operator should place the tail just below the bandage, between the docking shears, and with a firm steady stroke divide the lower part from the upper part.

"When the tail is cut off, the part round the bone may be seared with a hot iron, of a circular form, just large enough to inclose the bone of the tail; a small quantity of powdered rosin may also be applied to the part, and melted on it with the iron. The hair may then be united, and suffered to be in its natural position. Some breeders of horses have a practice of docking their colts when four or five months old. This practice, it is said, prevents the

necessity of nicking, as they generally carry their tails handsomely when docked at that early age. It is also supposed that it strengthens their backs, as the tail, by being shortened in this manner, requires less nutriment from the juices of the body. Whether this is the fact or not cannot be easily ascertained, but, on the other hand, it is probable that it might occasion considerable inconvenience to the colt, by depriving him of a great part of his natural defence against flies and other insects."

Nicking.

This operation is somewhat cruel, and unless properly attended to, fatal consequences will sometimes ensue. It consists in dividing the muscles that depress the tail, so that the muscles which raise it may operate freely.

The tail, in some horses, issues high out of the back, and describes a regular and beautiful sweep, much more elegant than the ascending curve which the nicked tail occasionally presents. It should, therefore, not be undertaken, except in cases where the tail hangs close to the buttocks. The operation is ably described by a late writer on farriery in the following manner:—

"The proper mode of proceeding is to cast the horse, and having all the dressings ready, the operator may cut a transverse line across the under part of the tail, at the distance of about two inches from the rump. The first incision should just go through the skin, after which the muscles on each side of the tail should be divided, taking care to avoid the artery, which generally runs close to the bone. The common practice is to cut three nicks at equal distances from each other: but in general, one nick will be sufficient, especially as three are apt to make the tail curve upwards, giving it a vulgar hackney-like character.

"As soon as the operation is over, take the pledgets of tow rolled up at the ends, so as to tie like a

string, and having sprinkled some fine oatmeal upon them, apply it to the divided part of the tail, and tie it on tolerably tight, and over that tie on a flannel bandage. The tail may then be put into the pulley, letting the weight at the other end of the string be just sufficient to keep the tail from falling down. On the following morning, cut the ties of the bandage through with the scissors, leaving on the bandage, which will stick on owing to the coagulated blood. This operation of cutting the ties of the bandage is necessary to be done on the following day, because the tail swells in some degree, and if confined too long and too tight by the bandage, a very high degree of inflammation and even mortification may ensue. Owing to a want of attention to this circumstance, it is said, that a regiment of dragoons in the English service, once lost about forty horses in the same week, which had undergone the operation of nicking. After the operation is completed, the tail is to be suspended by a pully, with a weight at the end of it. The object of this is to keep the divided edges of the muscles apart from each other, so as to prevent them from uniting again during the process of healing.

"It has been customary to make three incisions in the tail; but this is not necessary, one being generally sufficient, as the muscles lose all power of acting below the first incision.

"The bandage may be taken off on the third day, and the tail dressed with common digestive ointment, spread upon pledgets of fine tow, and bound on by a flannel bandage moderately tight. The tail should be supended by a pulley until it is perfectly healed, care being taken that the pulley will run easily from right to left, and *vice versa*, else the tail might be kept inclining too much on one side.

"Barlet invented a machine for suspending the tail without the use of a pulley. It consisted of a kind of saddle or pad, with a groove in it, from

which a cord passed to the tail, so as to draw it upwards over the horse's back.

"This machine, with considerable improvements, is used by Mr. Goodwin, at Charlton house stables, and with great success. It is certainly the safest mode of securing the tail from accidents; but it is liable to one objection, which is, that it prevents the horse from lying down during the whole time of its being used, and which may generally be calculated at a fortnight or three weeks from the time of performing the operation.

Should the tail swell, and a large quantity of matter be discharged, it will be necessary to take a little blood from the horse, and a few of the following diuretic balls may also be administered: Castile soap 4 ounces, nitre powdered 3 ounces, liquorice powdered 3 ounces, yellow resin 3 ounces, oil of juniper 1 ounce, Venice turpentine 3 ounces, ginger 3 ounces. With honey or treacle sufficient to make it into a mass of balls. Each ball to weigh two ounces.

Cropping.

This operation is introduced in order that the ears of horses may be changed from their natural shape and size, and appear more handsome and agreeable. The ears of the horse are, however, seldom of such a size or shape as to render them inconvenient, or unfit them for the purposes for which nature has designed them. This may sometimes occur; and occasionally wounds or diseases may render cropping essential; but in performing this operation no more of the ears should be taken away than what is absolutely requisite.

Cropping is performed by an instrument called the *cropping iron*, and a shape of the size which the ear is intended to be made is usually applied to the ear to mark the line of section. When the ear is cut, the skin and muscles recede considerably from the gristly part: this, however, is of no importance, and the wound heals in a few days without any other

care or attention than confining the animal within doors, and feeding him with a moderate cooling diet. Grooms will sometimes trim horses' ears, by depriving them of the fine soft hair that lines the inside of the cavity. This practice is equally absured with cropping, as appears from the following judicious observations of Mr. Clark:

"The ears of horses, as in other animals," says Mr. Clark, "are covered in the inside with a short down, intermixed with long hairs which line the external cavity of the ears, and seem designed by nature to prevent harsh sounds from making too great an impression upon the brain, and likewise to prevent the cold air, rain, dust, flies, &c. from annoying the internal ear. The means generally used to remove this down, &c. is by the scissors, the flame of a candle, or that of a burning torch. Both the latter are cruel and barbarous, and cause considerable pain to the animal, not only from the blisters that sometimes rise in the ear after this manner of singeing them, but likewise from the means that are used to make horses stand with patience to undergo the operation, that is, a twitch on the nose; and perhaps, if he is troublesome to the operator, one put on the ear. It is to be observed, that horses are very much guided or directed by the sense of hearing. This is obvious to those that hear distinctly, from the motion of their ears, and the direction they give them to whatever quarter any sound comes from, the attention they pay to what passes around them, or to what is spoken to them. Many of them, particularly the finest kind, as they only are liable to this kind of treatment, have the sense of hearing considerably blunted, if not rendered quite deaf, from the above operation.

"As this operation is generally first performed on young horses at the time they are breaking, it is the more hurtful: as uncommon sounds, such as rattling of carriages, drums, &c., which are entirely new to them, and to which they are then exposed on the

roads or in streets, must make the greater impression on the sense of hearing: and perhaps it may be owing to the above cause only that many horses are timorous to pass carriages, and remain so ever afterwards.

"Another disadvantage which attends this operation upon the ears of horses is, that they will not go on cheerfully when travelling in opposition to the wind, more especially if it rains; for as the wind and rain get free access to the ears, they are continually shaking their heads, and endeavouring to turn from it; and those which are of a more impatient temper will wheel suddenly round, in order to avoid what gives them so much uneasiness. They are then said to be restive; and whip and spurs are applied by way of chastisement for a supposed fault only.

"From what has been said, it will be obvious, from the practice of taking away the natural covering from the inside of the ears, that the internal ear must be exposed to be considerably injured, particularly from cold, dust, &c. which blunts the sense of hearing, and perhaps causes deafness; for it is observed in those horses which have been much used to this treatment, that they lose that lively, active motion of the ears, and appear dull and inattentive to what passes around them, and even to the voice of their keeper."

Castration.

This operation is useful in rendering horses more gentle and tractable; but some contend that the loss of strength and spirit, which the animal sustains, more than counterbalances this advantage.

A recent writer remarks, "The best mode of performing this operation is to throw the horse on some convenient spot on the off side, and when down, let the off-hind leg be drawn towards the neck, by which the scrotum will be fairly exposed. Having the scrotum firmly, make a cut at once through it, not of too great length, but sufficiently to admit the testicle being pressed out; this being done, apply the clams

of a pair of nippers on the cord within an inch of the testicle, and hold the clams sufficiently tight to stop the flow of blood, but not to bruise the cord: the stone may then be cut off with a scalpel, or it may be seared off with a burning knife. If it is cut off with a scalpel, immediately before the clams let go their hold, sear the end with a cord. Some apply a little powdered resin on it before searing, after which the clams may be loosened. When this is finished, proceed to remove the other in the same manner.

"After both are removed, a pledget of lint, wetted in warm spirits, may be introduced just within the edges of the wound; but no salt should by any means be introduced, as is the practice of some farriers; nor will any kind of bandage be easily retained: and if any thing of this kind is used, it should be very loosely applied, so as not to irritate.

"Some operators separate the epididymis from the testicle, and suffer it to remain, by which means they think that a portion of the animal's spirits is retained. A similar custom it said to prevail in France; but the French operators object to it, on the idea that it produces fistulous soars on the part. The fact is, that when any portion of the testicle is suffered to remain, though it cannot secrete semen, yet it has some action going on within, by which it produces some influence both on the mind and form; and as such, the future growth of the animal may perhaps be slightly affected by it, and perhaps his temper too, but the addition to the latter may probably not be a very unfavourable one.

"Where the operation is to be performed, the best time is probably when the foal is about three months old, though some prefer a much more advanced age, as six, or even twelve months, or more in some cases. In all animals there is, however, the least danger of inflammation while they are young, in performing such operations. Besides, it is better to cut colts before they have any propensity to hanker after mares, and get bad habits. When the foals are

early and the weather too hot, the latter end of May or the beginning of June would be a good and proper season.

"Before this operation be performed on a fat horse, he should be bled and kept rather low. It is best performed in mild weather. If there be a considerable degree of inflammation about the part, give the following drink: tincture of opium half an ounce, Peruvian bark 1 ounce, mithridate 1 ounce. In a pint of warm ale.

"The part should also be frequently fomented, and washed with a solution of sugar of lead. It will also be advisable to rub some blistering ointment on the inside of the thigh."

On Bleeding.

The operation of bloodletting is of very considerable importance to the welfare of the horse, and much danger often results when it is performed in an unskilful manner. The vein usually opened runs along the neck, and is called the *jugular vein.*

Mr. Clarke, of Edinburgh, in his work on preventing diseases of horses, remarks, "As horses are naturally timorous and fearful, which is too frequently increased by bad usage and improper correction, they require in some cases, particularly in this of bleeding, to be taken unawares, or by surprise, and the orifice made into the vein before their fears are excited. For this reason the fleam and blood stick have long been in use, and in skilful hands are not improper instruments for the purpose, although with many practitioners the spring fleam would be much safer, and on that account ought to be preferred. When a lancet is used, the instant the horse feels the point of it, he raises or shakes his head or neck, in order to shun the instrument before the operator has time to make a proper orifice, which frequently proves too small or too large: for this reason, those who have tried the lancet have been obliged to lay it aside. Many persons tie a ligature or bandage round the

neck, in order to raise the vein, and that they may strike the fleam into it with greater certainty; but a slight view of its effects in preventing this and other consequences, will show the impropriety of the practice.

"When a ligature is tied round the neck, previous to bleeding in the jugular vein, it is to be observed, that it stops the circulation in both veins at the same time: hence they become turgid and very full of blood, insomuch that they feel under the finger like a tight cord; and as the parts adjoining are loose and soft, when the stroke is given to the fleam, the vein, by its hardness and tightness, slips to one side, and of course eludes the stroke; hence a deep wound is made by the fleam to no purpose, and this is sometimes frequently repeated. Unskilful people have likewise a custom of waving or shaking the blood stick before they strike the fleam, in view of the horse, whose eye is fixed on that instrument, and when they intend to give the stroke, they make a greater exertion; hence the horse, being alarmed by its motion, raises its head and neck, and disappointment follows. The struggle that ensues from that circumstance prolongs the operation, the ligature at the same time being continued round the neck, a total stagnation of blood in the vessels of the head takes place, and hence it frequently happens that the horse falls down in an apoplectic fit. In such cases, the operator being disconcerted, generally desists from any further attempt to draw blood at that time under the idea that the horse was vicious and unruly, although the very treatment the horse had just undergone, rendered bleeding at that time more necessary, in order to unload the vessels of the head, in which the blood had been stagnated by the ligature round the neck. Therefore a ligature ought never to be used, as a moderate pressure of the finger below the orifice will always be sufficient to make the blood flow easily; but if the horse is lying on the ground, a ligature may then be necessary.

"But when the ligature is made tight before the orifice is made in the vein, and the horse happens to fall in an apoplectic fit, it may cause a blood vesse within the head to burst, and death may be the consequence.

"Another custom, equally absurd, is allowing the blood to fall in a dunghill, or amongst straw, or on dry sand, so that no distinct idea can be formed of the quantity that is or ought to be taken away. In such cases, horses have dropped down insensible from the loss of too much blood, before the operator thought of stopping the orifice.

"For this, and a variety of other reasons which might be mentioned, a measure, as above observed, ought always to be used, in order to ascertain the quantity of blood that is taken away.

"In pinning up the orifice, some have a custom of raising or drawing out the skin too far from the vein; hence, the blood flows from the orifice in the vein into the cellular membrane between it and the skin, which causes a large lump, or swelling to take place immediately.

"This frequently ends in a swelled neck; a suppuration follows, which proves both tedious and troublesome to cure. In cases where a horse may be tied up to the rack after bleeding in the neck, pinning up the external orifice may be dispensed with; but when a horse is troubled with the gripes, or any other acute disease, in which he lies down and tumbles about, it is necessary that the orifice be pinned up with care, in order to prevent its bleeding afresh. As the jugular vein on the near side is commonly chosen for convenience by those who are right-handed, the young practitioner should learn to perform on both sides of the neck. This he will find in practice to be not only useful, but sometimes necessary, as he may frequently have occasion to draw blood from horses in very awkward situations; he will likewise find it useful in various cases which it is needless here to particularise

"The proper place for making the opening in the neck or jugular vein is likewise necessary to be attended to; for when the orifice is made too low, or about the middle of the neck, where the vein lies deep under the muscular teguments, the wound becomes difficult to heal, and frequently ends in suppuration, with a protrusion of proud flesh from the orifice, which, unluckily, is as unskilfully treated in the common method of cure, viz. by introducing a large piece of corrosive sublimate into the wound: this not only destroys the proud flesh in the lips of the wound, but also a considerable portion of the flesh around it. This is called by common farriers, *coring out the vein.* It frequently happens that this corrosive application destroys the vein likewise, and sometimes violent bleedings ensue, so as to endanger the life of the animal. The most proper place for making the opening in the jugular vein is where the integuments are thinnest, which is about a hand's breadth from the head, just below the branching off of the vein to the lower jaw, and which may be distinctly seen when any pressure is made on the main branch of the vein.

"In performing the operation with a fleam, the operator should hold the fleam between the fore finger and the thumb of the left hand; with the second finger he is to make a slight pressure on the vein, and before it becomes too turgid, or full, make the opening; the same degree of pressure is to be continued on the vein, till such time as the quantity of blood to be taken away is received into a proper measure.

"Another great error, which generally prevails in opening the vein with a fleam, is the applying too great force, or giving too violent a stroke to it, by which it is forced through the opposite side of the vein. Hence there is danger of wounding the coats of the carotid artery which lies immediately underneath. Gibson, in his treatise on the diseases of horses, mentions the case of a fine horse that was

blooded in the plate-vein for a lameness in the shoulder, which was followed with a hard oval swelling about the size of a goose egg, which extended upwards on the breast, and also down the leg, attended with excessive pain, fever, deadness in the horse's looks, and all the other symptoms of an approaching mortification. In order to avoid the consequences sometimes attending these local operations in the breast, legs, &c. and as horses are more or less troublesome and restless, whereby accidents of this kind may happen, it will perhaps be advisable in most cases of blindness to draw blood from the neck-vein, where there is less danger of accident, more especially if a spring fleam be used, for although it might be of some advantage in particular cases to draw blood as near to the affected part as possible, yet the bad circumstances frequently attending it, seem to counterbalance any advantage that may be expected from it, especially as the quantity of blood drawn from the small veins is but inconsiderable, and of course no great benefit can be expected from it in horses when they are diseased.

"The principal object in drawing blood is to lessen its quantity, by which the remaining mass circulates with more freedom in the vessels; it likewise takes off the inflammatory tendency of the blood, removes spasms, and prevents other bad consequences that may follow, especially in plethoric habits; and, it is always to be remembered, that when the signs, or symptoms of a disease are taken from the motion of the blood, the disorders arising from it depend upon its circulation being either increased or diminished; hence, therefore, all the changes which take place in the texture, quantity, and quality of the blood, are attended either with diminution or an increase of its velocity.

"Although the cases which may require bleeding are numerous, yet one general caution is necessary, namely, never to take away blood but when it is absolutely necessary; for it is a fluid that may be

easily taken away but not so easily replaced. Besides, the practice of bleeding frequently, or at stated times, is exceedingly improper, as it disposes the body to become weak and relaxed. In bleeding, therefore, a due regard must always be had to the constitution, age, strength, &c. of the horses, and the state, or habit of body they are in at the time. Although blood ought not, in general, to be taken from horses on trifling occasions, when they may be said to be healthy, yet when cases occur that do require it, it may not only safely, but usefully be recommended, to take a greater quantity at once than is usually done; for instance, from three to four quarts, according to the urgency of the symptoms at the time, the strength and age of the horse being also taken into consideration.

"For as horses are very subject to inflammatory diseases, and those that are of the spasmodic kind, and as bleeding plentifully relaxes the whole system of the horse in these cases, the taking away a small quantity of blood is in fact playing with the disease. The horse is then said to have been blooded, and that satisfies the owner and farrier: time is thus lost, the disease acquires strength, and it may then be beyond the power of art to mitigate or conquer it; hence the horse falls a sacrifice to timidity and ignorance. It is to be remembered, that inflammatory diseases, particularly when the bowels are affected, make a very rapid progress in horses, and if they are not overcome at the beginning by bleeding plentifully, the horse commonly dies in twenty-four hours of a gangrene or mortification in the intestines."

Mr. Coleman, speaking of the inflammation of the vein which sometimes succeeds bleeding, observes, that, "whenever inflammation attacks the internal surface of the veins from bleeding, or any wound, the disease is to be considered as of the same nature, and requiring the same remedies, as the exposure of joints or other cavities.

"The first symptom of inflammation and suppuration within a vein, is generally a small degree of swelling about the orifice, the lips of which soon recede from each other, and a little oozing escapes from the part.

"At other times the swelling will be more considerable, attended with perfect hœmorrhage; and where the swelling extends much above the orifice, the vein is frequently callous and enlarged as high as the head."

On the first appearance of swelling in the part, the pin should be taken out, and the part fomented with warm water four or five times a day, and in the intervals the following lotion may be used: goulard 1 drachm, spirits of wine half a pint. To be put in a quart bottle and filled up with water.

This treatment, if regularly persisted in for a day or two, will generally remove the swelling and inflammation: but if the horse is fat, and considered to be foul in his body, a mild dose of purging physic may be given with advantage. It frequently happens that the horses which run in mail or stage-coaches are injured in the neck after bleeding, by the rein of the bridle rubbing against the pin which closes the orifice; and indeed instances have occurred of horses which work in the night, having the pin forced out, and bleeding until they dropped down before the accident was discovered. But, at all events, a carriage horse should not be worked on the same day on which he is bled, because the pressure of the collar in drawing always fills the veins, by stopping the circulation of the blood, and either prevents the orifice in the vein from closing and healing, or else bursts it open afresh after it has barely united.

When, however, the inflammation and swelling do not subside, and matter forms, the edges of the wound may be dressed with a small quantity of butter of antimony, applied with the point of a feather, which may be used once in three days. At

the same time a poultice of bran may be applied, by inclosing the poultice in a flannel bag, and tying it easy round the neck. This will lubricate and soften the skin, and will tend to keep down the inflammation. The most common practice is to introduce a small piece of corrosive sublimate, or else to dress the part with aqua-fortis, either of which are very dangerous, because they destroy all the parts which they touch, and the vein being eaten away also, the horse is in danger of bleeding to death, except the vein is tied by a ligature above the orifice.

Another writer on this subject remarks, that, "The cases where bleeding is required, are violent bruises, or strains in the muscular and tendinous parts where they are attended with much inflammation; also large wounds, where there is much laceration without much loss of blood. It is likewise proper in all cuticular disorders or eruptions on the skin, in large swellings on the body and legs arising from a plethoric state; in all deep punctures, when the horse shows symptoms of great pain; and in swelling of the legs or heels, when attended with much inflammation.

"Bleeding is sometimes the quickest method of giving relief in the beginning of inflammatory fevers, to which horses are very liable; it is also necessary in all violent acute pains, as in the gripes, or colic, stranguary, or suppression of urine; in rheumatic complaints, where the pain causes stiffness, or lameness, and which frequently shifts from one limb to another, or when it affects the neck, and occasions that stiffness and contraction of the muscles which is commonly called the chords; in inflammation of the eyes, or palate of the mouth, the latter of which is called the lampas, when the horse cannot eat his food on account of the tenderness of the parts; in all recent colds attended with defluxions of the eyes; in recent swellings of the glands about the throat, jaws, &c.; in inflammation of the liver, the lungs,

the pleura, stomach, intestines, kidneys, bladder, or any of the internal viscera; in apoplexy, vertigo, or giddiness, and in all disorders where the head seems affected; in eruptions of the skin, called surfeit; in full habits of body, where proper exercise has been neglected, and when a horse breathes with difficulty on the least exercise. On the other hand, bleeding is to be avoided in all cases of inflammatory swelling after matter is formed. It is also to be avoided in all cases of extreme lowness or weakness produced by fatigue or disease, or after strong evacuations by purging or scouring, or diabetes, or excessive staling

"Bleeding is also improper during the time of a horse's moulting, or shedding his coat; in fact it should never be practised unless some more substantial reason can be given than the mere plea of custom at certain periods of the year.

Rowels and Setons.

Rowels in horses are usually made in the following manner:—An incision is made through the skin by means of a sharp pair of scissors, or, what appears better, a sharp knife. The finger is then introduced below the skin, so as to separate it from the flesh all round, as far as the finger will reach. A piece of leather, about the size of a crown piece, is then inserted between the skin and muscles, having been first anointed with some stimulating ointment. A small piece of tow or caddice, spread with the same ointment, is put over the hole in the centre of the leather, the skin is laid down over all, and the part is covered with a pledget, also covered with ointment to keep out the external air

The leather is left in this situation for two or three days, during which time the parts adjoining the rowel swell, and at the end of that time there appears a discharge of a yellowish matter, which gradually becomes thicker and whiter. In three days at farthest the part must be examined, and the plug

removed from the central hole to allow the matter to flow out. The rowel is now complete, and may be continued as long as shall be found necessary. The action of the rowel is easily explained: the leather introduced excites a degree of inflammation between the skin and the flesh, and no means being taken to check this, it goes on, like most other inflammations of fleshy parts, to suppuration. Thus a discharge is produced from the part, which is found to have considerable effect in checking inflammation of some more important organ near which the rowel has been inserted.

Rowels are most commonly inserted in the belly, the breast, the inside of the thighs, the outside of the shoulders, and the hips. They are sometimes placed between the jaw-bones, below the tongue; but this is quite improper, since a good suppuration can seldom be brought on in this place.

Besides dangerous inflammations, rowels are found highly serviceable in large swellings of the hind legs, in obstinate cases of grease, and in strains of the shoulder.

Several rowels are sometimes necessary to be made at the same time; but they should be always placed as near as possible to the seat of the affection which they are intended to relieve.

Where considerable debility is apparent, the insertion of a rowel might be very injurious, as it would not suppurate kindly, and the discharge produced would tend to increase the debility. The discharge in these cases is commonly thin and ichorous; occasionally they are perfectly dry, and sometimes a mortification is produced.

Setons are very useful to drain off matter gradually from large abscesses or suppurating tumours. The method of introducing them is described in a previous part of this work.

VETERINARY
MATERIA MEDICA;

CONTAINING

AN ACCURATE DESCRIPTION OF THE VARIOUS SUBSTANCES EMPLOYED IN VETERINARY MEDICINE, WITH THEIR PARTICULAR EFFECTS ON THE BODY OF THE HORSE.

With occasional observations on the diseases of that animal.

ABSORBENTS. Medicines are so termed that correct any *acidity* that may exist in the stomach or bowels, by combining with the *acid*, and forming an inoffensive substance; in this view they are said to absorb it. *Chalk*, *prepared oyster shells*, *magnesia*, and the *alkalies* are of this kind.

Horses are sometimes disposed to eat their litter in preference to good hay, and not unfrequently they have a propensity to swallow earth, or any kind of rubbish. This is supposed to arise from the irritation of an *acid* in the stomach; and medicines of the *absorbent* kind are recommended for its removal; particularly *chalk*, mixed with chaff, or cut hay. It is very probable, however, that the formation of *acid* in the stomach depends upon debility, or some diseased condition of that organ. *Absorbents*, therefore, seldom prove effectual, unless preceded by a dose of warm purging medicine; and then they should be given in conjunction with *tonics*, such as *gentian*, *quassia*, *decoction of chamomile*, *wormwood*, &c. with an aromatic also, such as *cassia*, *ginger*, *cascarilla*, &c. When horses are in camp or at grass, they sometimes swallow so much earth, that it forms

large balls in the intestines resembling stones, which have in time occasioned death. Hence we may learn how necessary it is to purge horses when taken from camp or grass; which will probably remove any of this earthy matter that may have collected in the bowels. Horses that work in stone mills are more liable to this complaint than others: in the greater part of the cases I have met with, the horses had worked for some time in a mill, or were the property of a miller; horses in such situations should therefore have a mild purgative given them now and then, which would probably prevent the formation of those stones. I have lately seen a case of this kind which happened to a miller's horse; the poor animal suffered the most violent pain; though, when examined after death only a small stone of about three ounces was found. I have one in my museum which weighs 10 lbs.

ACIDS. This term is applied to medicines that have a sour taste. *Acids* are also distinguished by their changing an infusion of blue violets or litmus to a red colour, and combining readily with *alkalies* and *earths*. Many of them also combine with or dissolve metallic substances, forming with them very useful compositions, such as *blue vitriol*, *lunar caustic*, *red precipitate*, &c.

Chemists divide *acids* into three classes, viz. mineral, vegetable, and animal; and describe many different kinds under each class: but we shall confine our attention to such as may be employed, with advantage, in Veterinary Medicine and Surgery.

SULPHURIC ACID, VITRIOLIC ACID, or *Oil of Vitriol*. This acid was formerly prepared from *green vitriol* or *copperas* (vitriolated iron), or from the *pyrites*, or fire stone. It is now, however, obtained from sulphur, by burning it with nitre, in a close vessel containing a small quantity of water, which is afterwards separated from it by evaporation. *Vitriolic acid* is a powerful caustic, and generally requires to be diluted with water before it is used; but when it is wanted

to destroy excrescences, particularly those which arise in *canker* of the foot, it may be used alone with advantage. One ounce of the *acid* to a pint of water, forms a useful lotion for obstinate cases of *grease*; if made a little stronger it is a good application for foul ulcers. *Vitriolic acid* is sometimes mixed with *oil of turpentine* and *hog's lard*, as a detergent ointment for ulcerated heels, or for dispersing indurated tumours; and when mixed with a proper proportion of *Spanish flies*, it forms an active *blister*. (See Blisters and detergents.)

It is probable that *vitriolic acid* might be given internally as a *tonic*, with good effect; but for this purpose it requires so much dilution, that it could not be given to a horse, in sufficient quantity, without great inconvenience.

This acid, by combining with other substances, forms many useful compositions. With the mineral alkali, or soda, it forms *glauber's salt*; with iron, *green vitriol*; with copper, *blue vitriol*.

Nitrous Acid, or *Strong Spirit of Nitre*. This, like the preceding, is used only as an external application in Veterinary practice, though it might probably be employed internally with good effect, were it not for the same inconvenience that attends the exhibition of the vitriolic acid.

In human medicine it has been employed as a remedy for the venereal disease, but its efficacy in this way is doubtful. I believe, however, it is universally allowed, by practitioners, to possess a considerable tonic power.

Nitrous acid, in its concentrated or strongest state, is a powerful caustic; and when mixed with water, or unctuous substances, it forms many efficacious lotions and ointments for various external complaints. Almost every metal may be dissolved in this acid, with many of which it forms very useful caustics and escharotics; with silver it makes lunar caustic (*nitrated silver*), and with quicksilver, red precipitate (*red nitrated quicksilver*

That useful medicine termed nitre, is composed of this acid, and the vegetable alkali or potash (*kali*). The metallic combinations of nitrous acid may be employed, either in a liquid or solid state; they may also be diluted with water, or mixed with unctuous substances to form detergent ointments of any degree of strength that may be required.

Strong or concentrated nitrous acid is of a deep yellow colour, approaching to orange, and emits suffocating fumes of the same colour. When water is added, the yellow colour is destroyed, and it ceases to emit fumes: the same effect may be produced merely by the application of heat; in this state it is termed *nitric acid.*

AQUA-FORTIS is made by mixing nitrous acid with about an equal quantity of water.

MURIATIC ACID, or *Spirit of Salt.* This acid is obtained by distilling common salt with vitriolic acid.

Spirit of Salt is generally of a light yellow colour, from a small quantity of iron it usually contains, and when exposed to the air emits white suffocating fumes. This acid is sometimes used as a caustic, to destroy excrescences or fungous flesh, or to cleanse foul ulcers; and being considerably weaker than the two former, may be applied in its concentrated state without inconvenience.

Muriatic Acid is a component part of several useful preparations, among which are calomel, sublimate (*muriate of quicksilver*) and crude sal ammoniac (*muriate of ammonia.*) When *muriatic acid* is distilled with a mineral termed *manganese*, it acquires new properties: it becomes capable of destroying the colour of vegetable substances, and is therefore employed chiefly in the process of bleaching; in this state it is termed *oxygenated muriatic acid.* If glanderous matter be exposed to the *fumes* of this acid, its contagious quality is destroyed.—See *Glanders*, vol. ii.

ACETOUS ACID, or *Distilled Vinegar.* This well-

known acid is commonly employed as an embrocation for *strains* and *bruises*; but it proves much more efficacious in those complaints if mixed with *sal ammoniac* (*muriate of ammonia*), and a small proportion of *spirit of wine*. A useful lotion is also made, by mixing with *vinegar* a small quantity of *goulard* or *sugar of lead*, and then diluting it with water according to the nature of the case for which it is employed. *Goulard's extract*, or extract of saturn (*acetated water of litharge*), is made by mixing litharge with vinegar, and simmering the mixture for a considerable time over a slow fire. From the same materials, and varying the process a little, *sugar of lead* is prepared (*acetated lead*).

There is a medicine much used in human medicine, in febrile complaints, termed *minderus's spirit*, which is made by adding very gradually to *vinegar*, *salt of hartshorn*, or *prepared ammonia*, until it ceases to produce effervescence or boiling, and has destroyed the acidity of the vinegar: this medicine has been given to horses in cases of fever, and apparently with good effect.—The dose 8 or 10 ounces.

For all veterinary purposes, common vinegar is equal, if not superior, to that which is distilled.

TARTAREOUS ACID, or ACID OF TARTAR. *Cream of Tartar*, consists principally of this acid, having a small proportion of vegetable alkali, or potash (*kali*) combined with it.

Though *cream of Tartar* has been found useful in human medicine, it has no perceptible effect upon the horse, and I believe is very seldom used by experienced veterinarians. Writers on farriery have recommended cream of Tartar as a necessary ingredient in purgative medicine, to correct a dangerous acrimony they supposed to reside in *aloes* this opinion, however, is perfectly unfounded. Aloes, if not given too largely, is an innocent purgative, and were it otherwise, cream of Tartar has not the power of correcting acrimony. It has been recommended in febrile complaints, mixed with infusion of senna,

lenitive electuary, &c. so as to form a cooling drink. The dose from one to four ounces.

Cream of Tartar is found in an impure state, adhering to the sides and bottoms of vessels in which wine has been kept.

AIR. The health of horses very much depends upon the salubrity of the air in which they are kept; and it is probable, that many of their diseases arise from the little attention that is paid to the ventilation of stables. It is said that even the *glanders*, a fatal and contagious disease, has been generated by confining horses in an impure air. It is a common practice with grooms, particularly those who fancy themselves profoundly skilled in the art of farriery, to stop every crevice they can find in the stable, so that pure air is with difficulty admitted; and the noxious vapours arising from the litter, from perspiration and respiration, are in great measure confined. Horses thus situated must necessarily suffer in a greater or less degree; and though the air may not be so contaminated as to occasion fatal diseases, it is sufficiently so to debilitate the constitution, and thereby lay a foundation for numerous complaints, as well as to create local diseases, such as inflamed eyes, obstinate coughs, and perhaps *moonblindness*, as it is termed. Horses that have weak eyes and lungs are sure to be injured by this treatment: another inconvenience arising from it is, that of rendering a horse very susceptible of cold. *Ventilation* is, therefore, an object of great importance in the construction of stables; and is most conveniently done by making proper apertures in the ceiling, communicating with the external air; and, by means of windows, adapted to the form and size of the stable. It is a bad method of ventilation to leave the upper part of the racks open, so as to communicate with the roof of the building, as a current of air is thereby produced in the stall, from the ready ascent of the light air, over the horse's head. The litter should not be suffered to remain in the stall during the day, but

removed to some open place and well shaken, that the ammoniacal vapours it affords may be thoroughly dissipated. Should it be necessary for a horse to lie down in the day time, he should be allowed fresh straw.

ALKALIES. *Alkalies* form one of the classes of saline bodies, and are of three kinds: 1st, The *vegetable alkali*, kali or potash. 2nd, The *mineral alkali*, soda, or natron; and the *volatile alkali*, or ammonia. Each of these will be described under the following heads: *kali, natron, and ammonia;* which names are employed by the London college of physicians. *Alkalies* are distinguished by their changing blue vegetable colours to a green, and yellow to orange; by combining rapidly with acids, and forming with them neutral salts (see acids); and by rendering oils miscible with water (see emulsions and soap). The *vegetable* and *mineral alkalies*, from not being evaporable except in a high degree of heat, were termed *fixed:* and *ammonia*, being evaporable in the common temperature of the atmosphere, obtained the name of *volatile alkali.*

ALKANET ROOT. The only use of this root, is to give an elegant red colour to oils and ointments.

ALOES. This is the inspissated juice of certain plants of the same name, and the most effectual purgative for horses we are acquainted with. It is of an intensely bitter taste, and a strong, unpleasant odour.

The different sorts of aloes are distinguished by the names of the places whence they are brought.

SOCCOTRINE ALOES is brought from the island Socotra, in the Indian Ocean, and is supposed to be more safe in its operation than the other kinds. It is of a dark, reddish, or brown colour, quite opaque, and has a less disagreeable smell than the others; it sells at a high price, and is therefore not unfrequently adulterated. I have been so often disappointed in the effect of *soccotrine aloes*, or rather what is commonly sold under that name, that I now

always use the *Barbadoes*, which cannot be so easily adulterated without detection.

Barbadoes Aloes is brought from Barbadoes, and has been generally considered as a rough medicine, very liable to produce griping, and other unpleasant effects; but I have always found it a safe and efficacious purgative. *Barbadoes aloes* is of a darker colour than the former kind, less brittle, and of a stronger and more disagreeable smell. It is certainly more active than the soccotrine, and, as far as my experience goes, more certain in its operation; nor have I ever found it produce those dangerous effects that have been attributed to it, when given in a proper dose, and when the horse is not neglected during its operation: indeed, every kind of aloes is liable to produce even fatal consequences if given too largely, or if the horse be treated improperly while under their effect.* There is a peculiarity in the horse's intestines which renders them more liable to be injured by purgatives of every kind, than those of any other domestic animal; cathartic medicines should therefore be always prepared by persons of judgment and experience.

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* A late writer on Cattle Medicines, asserts that the Barbadoes Aloes is very rough, and often dangerous in its operation; and thinks his opinion confirmed by *an experiment made on his own stomach.* I can confidently assert, that I have given many hundreds of doses since the first publication of this book, and that not one single case has occurred in which it operated in a rough or unpleasant manner. I have also given an extensive trial to the Soccotrine and Cape Aloes, and again found them very weak and uncertain in their effect. The former are therefore preferred, on account of their superior strength; the common dose for a hunter being 4 or 5 drachms, joined with soap or kali, &c. This dose is equal to 7 or 8 drachms of Soccotrine Aloes; their purgative *quality* being of the *same kind*, though a given weight of the former contains more of it than the same weight of the latter; it may be proper to add, that my experiments have been made on the horse, and not on man.

CAPE ALOES is rather transparent, and very brittle; it is easily powdered, in which state it is of a bright yellow colour; the odour arising from it is not so strong as the *Barbadoes*, but rather stronger, and less agreeable than the soccotrine. This kind is sold at a much lower price than the others, but is so weak and uncertain in its effect, that it is seldom employed in veterinary medicine. The dose of *soccotrine aloes* is from five drachms to nine; of *Barbadoes*, from four drachms to an ounce; and of the *Cape*, from six to ten drachms.

Aloes generally operates more speedily when joined with *soap*, or either of the *fixed alkalies*. (See alkalies.)

Aloes is sometimes given as an alterative in the dose of one or two drachms. It is also an ingredient in *Fryar's balsam*, and *compound tincture of myrrh*; preparations often used by farriers. (See Cathartics, Vulneraries, Alteratives.)

ALTERATIVES are medicines that act very gradually upon the constitution, and therefore require to be continued for some time. The medicines most commonly used as alteratives in farriery are antimony, nitre, sulphur, and resin: these are generally given together, particularly the three former.

Though a mixture of these may sometimes produce good effects, it is by no means an eligible medicine. Indeed, I have seen it given frequently, but have very seldom observed it do any good: and in the few cases where it appeared beneficial, nature, perhaps, had no inconsiderable share in the operation.

It is commonly supposed that the good effects of *alteratives* arise from certain changes they produce in the blood: it is more probable, however, that they act only on the solids; and though their action is scarcely perceptible, they will be found upon a careful examination to produce some sensible effect, either upon the bowels, the kidneys, or the skin, increasing the action of those parts, and causing

them to secrete their respective juices or fluids more copiously. Another effect of *alteratives*, is to augment the vigour or tone of the system. From this view of the subject it appears necessary to divide *alteratives* into four classes, viz., *laxatives*, *diuretics*, *diaphoretics*, and *tonics*.

LAXATIVE ALTERATIVES are useful in many cases, and may often be substituted for *purgatives* with great advantage.

When a horse is troubled with worms, and is too weak to take strong medicines, or when he cannot be spared from his work, they are extremely convenient, and generally beneficial. In obstinate cases of *grease*, and in chronic inflammation of the eyes, they often do good; they are generally serviceable also in coughs of long standing, or even when they are recent, if not caused by strangles, in which disease the throat is often so much inflamed, and so very sore, as to render the exhibition of medicine by the mouth improper. Clysters however are often beneficial in those cases. In short, there is no medicine of more general utility in the diseases of horses, than the laxative alteratives, the most effectual of which is *aloes*, in the dose of one or two drachms, with an equal quantity, or rather more, of Castile soap.

When it is employed to destroy worms, from ten to twenty grains of *calomel* may be added. *Common salt*, in the dose of three or four ounces, is sometimes employed as an alterative, and generally opens the bowels in three or four days.

DIURETIC ALTERATIVES are composed of *nitre*, *resin*, *soap*, and *turpentine*. I have observed that *corrosive sublimate* acts generally as a *diuretic* in the horse, when given as an alterative, and sometimes very violently, if continued for two or three weeks. Diuretic alteratives are employed in swellings of the legs and other parts, or as a preventative in horses that are subject to such swellings. They are

given also to improve the coat and general condition of the animal.

Though not so effectual in many cases as the preceding, they are certainly very convenient and innocent, and produce so little disturbance in the body, that a horse may continue his work while taking them, without the least danger, even in the winter season. Nor is there any trouble in giving them, as a horse readily eats them, when in the form of a powder, with his corn. The *laxative alterative* has not this advantage, the aloes of which it is composed being extremely bitter, and therefore require to be given in the form of a *ball*.

Diaphoretic Alteratives are composed of medicines that act on the skin, gradually increasing the insensible perspiration, and giving a smoothness and gloss to the coat. The most effectual medicines of this class, are the preparations of *antimony* (see antimony); but these may be rendered more efficacious by being joined with other medicines.

The complaints in which this kind of *alterative* is most useful, are those termed *surfeit* and *hidebound*; they are also employed to remove an undue determination of blood to any internal organ, or to diminish general plethora.

Diaphoretic alteratives seldom prove effectual, unless assisted by exercise and good grooming.

Tonic Alteratives are composed of the preparations of iron, copper, zinc, and arsenic: there are also vegetable *tonics*, such as Peruvian bark, quassia, gentian, and other bitter roots. It is remarkable that arsenic,* though so poisonous in the human body, is the best *tonic* for horses we are acquainted with, and may be given even in considerable doses, with perfect safety. (See Arsenic.)

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* Arsenic is said to be a powerful tonic in the human body, but is considered as a dangerous remedy, and must be employed with the utmost caution.

The medicines we have just named will be fully described in their respective places.—(See Iron, Copper, Zinc, Bark Peruvian, Gentian, and Quassia.)

The alteratives recommended by writers on farriery are not composed according to the distinction we have here made; but laxatives, diuretics, &c. are mixed with little discrimination: thus, as we have before observed, antimony, nitre, sulphur, and resin, form their general alterative; and when it was required to remove diseases, supposed to arise from obstruction in the blood-vessels, some ponderous medicines were prescribed; among these were Cinnabar, and Æthiop's mineral. This mechanical mode of removing obstructions, however, is now totally disregarded, being incompatible with our present knowledge of physiology.

ALTHEA. See Marsh-mallows.

ALUM. A saline body, composed of the *vitriolic acid*, and *alumine*, or pure clay. It is used internally as an *astringent* in *diarrhœa*, *diabetes*, &c. in doses from half an ounce to an ounce, and is generally joined with *bitters* and *aromatic stimulants*, such as *gentian*, *cassia*, *aniseed*, *caraway seed*, &c. For external purposes *alum* is very useful; it is a good remedy for the *grease*, when finely powdered and sprinkled on the diseased parts; when burnt, as it is termed, it becomes an excellent remedy for cleansing foul ulcers, and more effectual in obstinate cases of grease.

Burnt Alum is made by putting any quantity of alum in an iron ladle, or common fire-pan, and keeping it over a gentle fire, until its watery parts are evaporated, and it is converted into a light and easily pulverable substance. If exposed to a strong heat for some time, the alum is decomposed, and of course useless.

ALKOHOL. See Spirit rectified.

ALLSPICE. Jamaica Pepper.

This is seldom employed in veterinary medicine, being very inferior to many cheaper medicines of the

same class; its essential oil, however, possesses a considerable stimulant power, and may be employed in the composition of cordial medicines.

The dose is from twenty drachms to half a drachm.

AMBER. This is what naturalists term a *bitumen*. It affords only one preparation that is used in veterinary practice—an essential oil, of a dark colour, and very disagreeable odour—which is employed as an embrocation in strains, bruises, &c. generally mixed with other oils, such as *oil of elder*, *turpentine*, &c. It is given internally as an antispasmodic, in doses from two drachms to half an ounce. For medical purposes this essential oil is rectified, whereby it becomes of a lighter colour, and loses in some degree its unpleasant smell; but it does not appear to be rendered more efficacious. There is a *salt of amber* kept in the shops, procured from *amber* by sublimation, but it is never used in veterinary practice.

AMMONIA. This is the modern term for wha. was named *volatile alkali*, and is procured either from bones or sal ammoniac. It is kept in the shops, both in a solid and a liquid form. Strictly speaking, *pure ammonia* exists only in the form of *gas*, or air; but water will absorb a considerable quantity of this air, and when saturated with it, becomes a violent stimulant, capable of inflaming and even blistering the skin. This is termed *water* of pure ammonia, or *strong spirit of sal ammoniac*, and is extremely useful in dispersing indolent tumours, if mixed with an equal quantity of sweet oil, in which camphor has been dissolved. It is a good application also in swellings of the back sinews, or other parts, in consequence of strains or bruises. *Water of pure ammonia* is too strong for internal use; but when *ammonia* is by a chemical process combined with *carbonic acid*, or fixed air, it assumes a solid form, and is rendered sufficiently mild for internal use. In this state it is named *prepared ammonia*, *volatile sal ammoniac*, or *smelling salt*, being much used for smelling-bottles,

as its quick pungent odour is well calculated to remove faintness.

PREPARED AMMONIA is an excellent stimulant and cordial, and may be given in doses from half a drachm to two drachms. I have seen it very serviceable in the latter stages of fever, when debility is the leading symptom.

When prepared ammonia is dissolved in water to saturation, it forms *water of mild ammonia, or common spirit of sal ammoniac*; when distilled with spirit and some aromatic oils, *spirit of sal volatile*, or *compound spirit of ammonia*; and if *assafætida* be added, the *fætid spirit of ammonia* is produced, which is an excellent antispasmodic. (See Assafœtida.)

The SALT and SPIRIT OF HARTSHORN are nearly the same as the *prepared*, and the *water of ammonia*; but being distilled from bones or stag horns, which are of the same nature, they are slightly impregnated with *animal oil*, which gives them a peculiar smell, and is supposed to increase their antispasmodic power. (See Antispasmodics.)

AMMONIACUM is divided into two sorts: the first is of a yellowish colour, interspersed with small pieces of wood, and other extraneous matter; the other, in small pieces or drops, of a whiter colour than the former, and much more pure: this is commonly called *drop ammoniacum*. The former, however, may be employed for veterinary purposes, making a little allowance in the dose for the extraneous matter it contains; but this may be in a great measure separated, by pounding and sifting.

GUM AMMONIACUM is an excellent expectorant, in doses from three to five drachms. It is advantageously joined with powdered squills, and in some cases with camphor, balsam of tolu, and opium.

Horses that are of a full habit, should be bled and take a laxative ball previous to the exhibition of those expectorants, which generally renders them more efficacious. It may be proper to observe, that *ammoniacum* is never to be employed in recent coughs

arising from *catarrh*, or cold, but only in the *chronic* kind, that are not dependent on inflammation.

ANGELICA. An aromatic plant, too weak for veterinary purposes.

ANGUSTURA BARK. This is said to be a good tonic and stomachic medicine; and is often employed by medical practitioners, in cases where the Peruvian bark does not agree with the patient. It does not appear to be necessary in veterinary practice, and is very rarely used.

The dose is from half an ounce to an ounce or more.

ANISE-SEED or *Aniseed*. This seed is much used in horse medicine, as a stimulant and cordial, but its power is by no means considerable. It is thought to possess also an expectorant quality, and is therefore given in coughs and other complaints of the lungs, but is generally joined with other expectorants. It is certainly, though weak, a very grateful stimulant, and does much good where the stomach is weak, and disposed to flatulency; it is, therefore, a useful ingredient in cordial medicines. The dose is about one ounce or rather more.

All the virtues of aniseed reside in its essential oil, which is easily obtained by distillation. This is by far the neatest and most convenient form for using the medicine, and should generally be preferred.

The dose is from half a drachm to one drachm.

ANTHELMINTICS. Medicines that destroy worms, or expel them from the intestines. The most effectual are the mercurial purgatives.

A variety of vegetables have been thought to possess this quality, but without foundation; among these are box, rue, savin, and wormwood. Æthiop's mineral, antimony, sulphur, and tin, have also been considered as *anthelmintics;* but I have never known any of them effectual in this way. I believe, however, that tin has not been fairly tried; and as it is an efficacious anthelmintic in dogs, it may probably be found useful in horses.* Of all the mercuria-

preparations, *calomel* is by far the best for this purpose, and may be given with aloes, soap, and some aromatic oil, with a little ginger. Many prefer giving the calomel at night, and the purgative the following morning. Aloes are a good *anthelmintic*, particularly when mixed with a small proportion of gamboge. Arsenic has been very fairly tried, and does not seem to possess any *anthelmintic* power. A saline substance has been lately introduced from India, as a remedy for that species of worm termed *botts*. It seems to be composed of common salt and liver of sulphur, and is named *sal indus*. It does not appear to deserve the character that has been given of it; though, like salt or brine, it will sometimes cause the common or intestinal worm to be evacuated.

At present we know of no certain remedy that will destroy *botts*, though they often pass off spontaneously.

It has been supposed, that worms are sometimes generated in consequence of debility in the digestive organs. Tonics have therefore been recommended, particularly the vegetable bitters, such as bark, wormwood, camomile, &c. When worms are discovered in the horse's dung, after a fair trial has been given to mercurial purgatives (especially if he appears to be weak, and incapable of much work), it would be advisable to give tonic and cordial preparations, with a generous diet: but, whenever this is done, there must be proportionate exercise.

ANTIMONY. This is a heavy, shining, brittle mineral, somewhat like black lead when powdered, but of a darker colour. It is common in Germany and France. A small quantity is found in Cornwall, but not sufficiently pure for medicinal purposes.

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* I have lately had an opportunity of trying the efficacy of tin, as a worm medicine; it sometimes destroys them, but not uniformly; and appears to be more effectual when joined with calomel.

Antimony is composed of a metallic substance termed *regulus of antimony* and *sulphur*. It is given as an *alterative*, in doses of an ounce or more, to improve the coat and condition of horses; some give it to destroy worms, but it does not appear to possess any power of that kind. A variety of useful preparations is made from antimony, many of which are more efficacious than the mineral itself: among these are *liver of antimony* (sulphurated oxyd of antimony), *antimonial powder*, which is said to be the same as *James's powder*, *emetic tartar* (tartarized antimony), *golden sulphur of antimony*, and *kermes mineral*; each of these will be described in its proper place.

ANTICEPTICS are medicine which prevent putridity, or remove it, if already begun. The most efficacious are *bark* and other bitters; *opium*, *wine*, *ether*, *ammonia*, and *camphor*.

Horses do not appear to be subject to those fevers which, in the human system, are termed putrid; so that these medicines are not often required. In gangrene, or mortification of the external parts, however, they are very useful. The efficacy of these medicines seems to depend on their tonic or strengthening quality; as putridity in the living body is generally the effect of a high degree of debility.

ANTISPASMODICS are medicines which possess the power of allaying inordinate or painful motions in the system, particularly those involuntary contractions in parts which are naturally subject to the command of the will.

Medical writers divide *antispasmodics* into two kinds, viz. stimulants and sedatives. To the former belong arsenic, preparations of copper, zinc, and iron; also ammonia, ether, essential oils, &c. The latter comprehends opium, musk, camphor, and all the vegetable narcotics.

Medicines of the fœtid kind, such as galbanum, assafœtida, &c. have also an antispasmodic quality.

When spasm arises from irritation, *sedatives* are to

be given, but when it depends merely on debility *tonics* are evidently proper.

APERIENTS. Opening medicines. (See Laxatives and Cathartics.)

AQUAFORTIS. Weak nitrous acid. (See Acid nitrous.)

ARABIC GUM. (See Gum Arabic.)

ARSENIC. There are two kinds of *arsenic* kept, the *white* and the *yellow*. The latter is a combination of *white arsenic* and sulphur, either natural or artificial, varying in colour according to the proportion of sulphur, which, when considerable, gives it an orange or red colour; it is then called *realgar*, and used as a pigment only.

White arsenic is obtained in the process of roasting certain ores. The arsenic sublimes, and is found in chimneys adapted to the purpose. It is beautifully white and very heavy, but easily reduced to a powder. The powdered arsenic of the shops is generally adultered, and ought never to be depended upon. The practitioner should always buy it in the lump, and either powder it himself or see it done.

White arsenic is one of the best *tonics* in horses that we are acquainted with; and, though a violent poison in the human system, may be given to this animal with perfect safety. From its tonic quality t has often suspended, or apparently cured, the *glanders;* but its effect in this way, I believe, is never permanent. It is prudent to begin with a small dose but not less than eight grains. This may bé gradually increased to twenty or thirty, and continued as long as there is occasion. In experiments on glandered horses, I have seen a dose of two drachms given twice a day, and continued for a week: at which period it produced inflammation of the bowels. I have often known two drachms given for two or three days successively, without any perceptible effect; it will sometimes, however, in that dose, occasion great disturbance in the stomach and bowels. In smaller doses it seems perfectly innocent. When

arsenic is employed as a tonic or strengthening medicine, it should be finely powdered, and mixed into a ball with aniseed, ginger, or other cordials. At the same time, attention should be paid to the horse's diet, &c. It is necessary to give some mucilaginous liquid, such as *water gruel*, or infusion of linseed, just before the *arsenic*, that it may not act upon the stomach too violently. (See Balls.)

The cases in which arsenic is said to be most beneficial, are those where horses become weak and emaciated without any apparent cause; sweating with the most moderate exercise, and almost incapable of doing a day's work.

I have tried its powers as a vermituge, and though in some cases it appeared to destroy the worms, it was by no means uniform in its effect. In one case, where it was given by way of experiment to a glandered horse, it appeared to have destroyed some botts, which were found dead in the stomach.

ASSAFŒTIDA, a gummy and resinous substance, possessing a powerful and most unpleasant smell. It is much used in human medicine, as an *antispasmodic* in nervous and hysterical complaints. In veterinary practice it is not so frequently employed, though I think I have observed good effects from it in spasmodic complaints, and some practitioners speak highly of its virtues. It is said to be serviceable in obstinate coughs, or thickness of wind, and flatulent cholic. It appears to be more efficacious when joined with ammonia, in the form of *fœtid spirit of ammonia*, a preparation kept in the shops. The dose of assafœtida is from two drachms to half an ounce or more; it is generally joined with galbanum, ammoniacum, &c. When employed as an expectorant, *squill* is a useful addition.

The dose of the fœtid spirit of ammonia, is from one ounce to one and a half ounce.

ATTENUANTS. Medicines were thus termed, which were supposed to render the blood more fluid.

BALLS, or *Boluses.* This is the most common form in which medicine is given to horses, and generally the most convenient. Every groom ought to make himself expert in giving *balls*, without using the instrument termed a *balling iron*; but there are some horses that will not take a ball by any other means. In giving a ball the horse's tongue is drawn out on the off or right side, and held firmly with the left hand, while with the right the ball is quickly passed over the tongue into the pharynx, or top of the gullet: the moment the right hand is withdrawn from the mouth the tongue is let loose, and the ball generally swallowed. The *balling iron* is so contrived as to keep the mouth open, while the ball is forced into the throat; it is then immediately withdrawn.

Balls should be made at the time they are wanted, as by keeping they often become so hard as to be almost insoluble in the stomach, sometimes passing through the intestines unchanged; by keeping they also lose much of their strength, particularly when the ingredients are evaporable in the common temperature of the atmosphere, which is the case with camphor, ammonia, essential oils, &c. But the most serious inconvenience which arises from giving balls that have been kept until they become very hard, is, that they are liable to stick in the throat or gullet, and thereby endanger the horse's life: indeed, I have known horses destroyed in this way.

When balls are composed of very stimulating ingredients, the horse should drink a little water before they are given, to prevent too strong an action upon the stomach: it is better to give the water before the medicine, as a horse can seldom be induced to drink immediately after.

When arsenic, sublimate, or any of those corrosive medicines are given, a considerable quantity of water gruel or decoction of linseed should be given before the ball. Balls cannot be conveniently given unless wrapped up in paper; but for this purpose the softest and thinnest should be chosen.

BALSAMS. Balsams are generally fluid, of various degrees of thickness, odorous, and combustible; they resemble resins, being soluble in spirit of wine; and, when thus dissolved, impart to water a sweetish taste, and a milky appearance.

BALSAM OF CANADA is a very pure kind of turpentine, and though preferred on this account to Venice and common turpentine, is unnecessary in veterinary medicine, being very expensive; whereas Venice turpentine is much cheaper, and I believe equally efficacious.

Canady balsam is a strong diuretic in the dose of one ounce or more; in smaller doses it has been recommended in chronic cough, and diseases of the lungs.

BALSAM OF COPAIVA or *Capivy*, possesses nearly the same properties as the preceding. It has been often employed, with success, in the flatulent cholic or gripes; it has been given, also, in chronic cough with good effect.

The dose is about one ounce or more.

BALSAM OF GILEAD is nearly similar to the *capivy*, but more pleasant. Many virtues have been attributed to these balsams by medical writers: they were supposed to heal ulceration of the lungs, kidneys, or other internal parts, and to be powerful corroborants. They do not appear, however, to possess these qualities, nor do they seem to differ much from *turpentine* in their medical virtues. (See Turpentine.)

BALSAM OF PERU. This is of a different kind from the former balsams, being more stimulating, and better calculated as a remedy for obstinate coughs: it should be assisted, however, by other expectorants, such as *squills*.

The dose is from one to two drachms.

BALSAM OF TOLU. This is generally in a solid form, of a light yellowish colour, and fragrant odour; it is used for the same purposes as the balsam of Peru, in doses from two to four drachms.

BALSAM OF SULPHUR. This is made by boiling sulphur and olive oil, until they are united: they

form a dark-coloured mass rather like treacle in appearance, but more tenacious, and of a very disagreeable odour.

Balsam of Sulphur is used as an *expectorant*; but farriers frequently employ it in recent inflammatory coughs, which is highly improper. It may be useful however, in *chronic* coughs.

The dose is from half an ounce to one ounce.

BARBADOES TAR is a bituminous substance, brought from the island of Barbadoes. It is nearly of the colour and consistence of common tar, but smells differently, and its colour approaches more to brown. It has a considerable diuretic power, and is said to be useful in *chronic coughs*. Farriers frequently use it for this purpose; but by giving it indiscriminately they often do mischief. They also employ it as an external remedy in strains and bruises, generally dissolved in oil of turpentine, and oil of elder.

BARBADOES ALOES. See Aloes Barbadoes.

BARILLA. The name of a sea plant from the ashes of which *mineral alkali*, or *soda*, is obtained in an impure state. (See Alkalies.)

BARK, PERUVIAN, or *Jesuit's Bark*. Though in the human subject bark is a useful tonic, and febrifuge medicine, it has no very remarkable effect on the horse. I have seen it do good, however, in gangrene, or mortification of the external parts, when mixed with opium, ammonia, and ginger. It is serviceable also in cases of debility, arising from large suppurations, and where there is a copious discharge of matter. It may be employed likewise in *diabetes*, a disease consisting in an excessive discharge of urine.

The dose is from six drachms to one ounce and a half, or two ounces.

There are three sorts of bark: the pale or *jesuits*, the *red*, and the *yellow*. The first is considered the best, and is most commonly used, but the others do not greatly differ in their effects. *Oak bark* would

probably be found a useful substitute for Peruvian bark. By boiling bark in water a considerable time, its virtues are said to be considerably diminished.

BARLEY is sometimes used as food for horses; but is less fit for that purpose than oats or beans; I have known it tried as a substitute for the former, when it was found difficult of digestion, and productive of many complaints. if horses, however, be accustomed to it gradually, it proves very nutritious and useful.

BATHING. A remedy seldom employed in the diseases of horses. I once saw an obstinate case of costiveness removed by driving the animal into a river. It is said, that lameness, arising from strains, may be cured by making the horse swim; but I am inclined to doubt the efficacy of this practice. The warm bath would probably be found serviceable in spasmodic complaints, if it could be easily managed.

BAY LEAVES are used only as an ingredient in fomentations.

BEANS are often used as an article of diet. If given moderately to horses that work hard, they prove extremely useful and invigorating, but to such as are not much worked they often do harm, by disposing the system to inflammatory complaints.

BENZION, or *gum Benjamin.* A concrete resinous substance of a yellowish colour, inclining to pink, and variegated with small white masses. By exposure to a strong heat, it gives out an extremely light flowery substance, which is termed *flowers of Benjamin.* This is beautifully white and fragrant, and used in medicine in coughs, and other complaints of the lungs. In veterinary medicine neither the resin or flower are employed, nor do I know any disease in which they are likely to be of use.

The former is an ingredient in the traumatic or Fryar's balsam, now called compound tincture of Benjamin; and the latter is employed in making paregoric elixir or camphorated tincture of opium.

BISTORT. The roots of this plant are considered

the most powerful of the vegetable astringents; they have been recommended as a *styptic*, to restrain hæmorrhages, but ought never to be depended upon for this purpose. Many imaginary virtues have been attributed to this plant; perhaps as a powerful astringent it may be used in certain cases of diarrhœa, particularly that to which horned cattle are subject. The dose is from half an ounce to one ounce, and may be given either in powder, or boiled in water and made into a drench.

BITHWORT. This root, though formerly celebrated, is now very rarely employed. Farriers sometimes use it as a stimulant, but its powers are slight, and it is now superseded by more valuable medicines.

BLEEDING. This operation is frequently required in the diseases of horses; and if employed seasonably, and to a sufficient extent, is the most efficacious remedy we are acquainted with. When a horse appears dull and heavy, and indifferent about his food, by bleeding we often prevent a fever. If a horse is bled at the commencement of a cold, the complaint generally proves moderate, and of short continuance. In all cases of internal inflammation, or symptomatic fever, bleeding is the most essential remedy, provided the operation be performed at an early period, and the blood drawn in sufficient quantity. In such cases I have often taken away five quarts, and repeated the operation the following day when it appeared necessary. By bleeding copiously at first, these formidable diseases are crushed at once, while by suffering them to proceed or become at all violent, which they will do, unless this practice is adopted (or if only a small quantity of blood is drawn), they generally prove fatal: nor will bleeding then be of any service.

Bleeding is either general or local; that is, it is done either so as to affect the system in general or a particular part only. For general bleeding, the jugular or neck vein is most convenient.

When the vein is firmly pressed with the fingers of the left hand, the blood is prevented from descending, and that part of the vein which is above the fingers, is considerably distended and becomes very conspicuous; in this state it may be easily opened with a lancet held in the right hand. The vein will continue to bleed as long as the pressure below is continued.

Farriers bleed with a *fleam*, which, though a clumsy method of operating, is certainly safer in unskilful hands. In topical bleeding a vein is chosen as near as possible to the affected part, or the vessels covering the part are opened: in the inflammation of the eye, for example, relief is often obtained by scarifying the inner surface of the eyelid, or by opening a small vein, which is easily seen, going from the inner corner of the eye towards the nose.

A graduated tin vessel, capable of containing five quarts, is very convenient for the purpose of receiving the blood; every pint being marked on the inside of the vessel, so that the quantity of blood that is taken off may be exactly known. The blood should always be preserved, that we may judge from its appearance of the nature of the disease, and whether it is proper or not to repeat the operation. When it continues fluid a considerable time, it denotes an inflammatory state of the system. Should a whitish or light buff coloured jelly appear on its surface after it has coagulated or settled, and should this jelly be of considerable thickness, rather firm, not easily penetrated by the finger, we may be satisfied that the horse's complaint is inflammatory; that bleeding was a proper remedy; and that, if the symptoms continue, the operation may be repeated with advantage: but if the blood coagulates quickly, is uniformly of a dark liver colour, loose and easily broken, with a considerable quantity of water upon its surface, it denotes debility, and shows that the disease arises from a weakness of the system; that instead of *bleeding*, *tonic* and *cordial* medicines

are to be employed, with every thing that may tend to restore the animal's strength.

In order to judge correctly by the appearance of the blood, it should be drawn from a large orifice, and not suffered to run down the sides of the vessel which receives it. The first quart that is drawn should be put aside for examination, and not shaken or disturbed in any way until it has perfectly coagulated.

When bleeding is employed as a preventative, or in any slight complaints, from two to three quarts may be taken off, according to the horse's strength and condition; but in cases of internal inflammation or fever, a more copious evacuation is necessary.

When horses are taken from camp, or grass, and put into warm stables, they are very subject to inflammatory complaints, and dangerous fevers; under those circumstances, moderate bleeding now and then will prevent such diseases. Horses that are getting into condition, as it is termed, are liable to similar disorders, unless moderate bleeding is occasionally employed. I am inclined to believe, however, that it is a bad practice to bleed often upon trifling occasions; it is liable to induce a plethora or fulness of habit, whereby a horse is rendered more susceptible of disease than he would otherwise be. Moderate purging, and regular exercise, with a proper regulation of diet and temperature, are fully adequate to the prevention of disease on those occasions; but these are too often neglected.

We are told by a pretender to veterinary science, that it is seldom necessary to pin up the orifice which is made in the skin by bleeding. I grant there is not often any danger to be apprehended from its bleeding again, but unless it is pinned up, that is, unless the lips of the wound are brought into contact and kept in that situation, by passing a pin through the edges of the skin, and twisting a little tow round it, as is generally done by farriers, considerable inflammation and swelling will sometimes

take place in the wound, and matter will often form in consequence. I can also assure that gentleman, from considerable experience, that the *fleam* has been found, upon many occasions, particularly for opening the neck vein, a better instrument than the *lancet*; the latter makes an orifice in the skin not larger than the vein, and as the horse is generally a little restless, the blood soon gets between the skin and the vein, plugging up the orifice in the latter, and sometimes diffusing itself in the cellular membrane, so as to cause a swelling. I do not know whether this opinion is sanctioned by Solleysell, la Fosse, Gibson, and other old writers, or not: I can only say, that I have learnt it from experience, which I consider a surer guide than any book of farriery, not excepting the *Philosophical Treatise* of the gentleman to whom I allude. I have before endeavoured to show the advantage of early and copious bleeding in the fevers of horses, whether simple or symptomatic.

I think it necessary, however, to repeat, that it is the most important remedy we can employ on these occasions, and may be carried to the extent of five quarts, or even six in large strong horses with the best effect. The practice of bleeding moderately in *fevers* is highly to be reprobated: it raises for a short time delusive hopes of a recovery, but scarcely ever proves effectual. I do not mean to recommend such plentiful bleeding on every occasion, or when a horse is merely affected with a catarrh or cold; it is only proper in cases of *real fevers*, depending either upon *internal inflammation*, upon an undue determination of blood to the interior parts of the body, or upon general inflammation. The disease termed staggers, must be included.

BLISTERS. This term is applied to medicines that inflame the skin, and cause watery bladders to rise upon its surface; the most useful of this kind is the cantharis or Spanish fly, which forms the principal ingredient in all our blisters. There are many

others, however, which are generally mixed with it, as auxiliaries, among these are helebore, euphorbium, turpentine, &c.

Blisters are of great use in veterinary medicine; they are extremely efficacious in dispersing callous swellings, the consequence of *strains*, *bruises*, &c.

In inflammation of parts remote from the surface, they are of great service. When the internal parts of the foot are inflamed, relief is generally obtained by blistering the pastern, provided the subordinate or auxiliary remedies are not omitted, such as rasping the hoof, paring the sole, soaking the horny part of the foot in warm water, or applying a poultice to it, and giving a dose of physic.

Blistering is the best remedy for *curbs*, *windgalls*, *spavins*, &c. It is serviceable also in inflammation of the internal organs. When the lungs are inflamed, for example, by blistering the sides extensively, we lessen the determination of blood to the diseased part, and thereby afford great relief.

Broken knees, unless skilfully treated, frequently leave a callous swelling on the part, for the removal of which, blistering should always be employed. When blisters are properly made, and free from any caustic ingredients, such as sublimate, vitriolic acid, &c. there is no danger of destroying the hair; and if the first blistering does not prove effectual, it may be repeated until the desired effect is produced.

BLUESTONE. Blue Vitriol, or *Vitriolated Copper*. This is composed of oxyd of copper and vitriolic acid. It is extremely useful as a mild caustic and detergent, and is an excellent application to almost every kind of ulcer, disposing them to heal sooner than any other application. The best method of using *blue vitriol* is in a state of solution, that is, put as much of it (in powder) into a pint of water as the latter is capable of dissolving, and to facilitate the solution, let the water be boiling hot: this solution may be used alone, or diluted with water, as the circumstances of the case may require; it may also

be made stronger by the addition of *strong nitrous acid*, or vitriolic acid. When *blue vitriol* is used in substance, it should be finely powdered and sprinkled on the ulcer.

In bad broken knees, the ligaments are often wounded, and there is generally some difficulty in healing the wound; I know nothing that does so much good in those cases as the *solution of blue vitriol*, particularly if applied hot.

As an internal remedy, blue vitriol is said to possess a *tonic* power, but it should be given cautiously, and much diluted. I once saw six ounces given to a glandered horse, by way of experiment; it soon destroyed the animal, by occasioning the most violent inflammation of the stomach and bowels; it appeared to have acted as a caustic on the former organ.

In giving blue vitriol, I would recommend a very small dose at first, not more than half a drachm, which might be given in the form of a ball, provided it is properly diluted in the stomach, by making the horse drink immediately before, or after.

BOLE. A red clay, containing a small proportion of oxide of iron, often used by farriers as an astringent in diarrhœa, or in bloody urine, but it certainly does no good in those complaints. It is sometimes, however, serviceable as an application to ulcers, where the discharge is thin and acrimonious.

BORAX, when dissolved in water, is sometimes applied to the mouths of young horses that are inflamed by cutting teeth; I have found, however, that alum, which is much cheaper, would be equally effectual.

BOX. The leaves of box have been said to destroy worms, but if really *althenmintic*, it is certainly too weak to deserve our attention.

BRIMSTONE. (See *Sulphur.*)

BUCKBEAN. A useless plant, and though valued formerly, is now scarcely ever employed.

BUCKTHORN. The juice of the berries of this

plant is supposed to possess a purgative quality, and is generally made into a sirup with sugar, though farriers sometimes employ it with other purgatives; it is certainly useless as a medicine for horses.

BURDOCK, a common plant, known by its burs. The leaves are said to be diuretic; and are employed in making the green elder ointment, or Pompilion (Ung. *Populeon*) so much used by farriers.

BURGUNDY PITCH. The inspissated juice of a species of fir tree; it somewhat resembles yellow resin, but is less brittle and transparent. What we commonly meet with in the shops, appears to be an artificial composition. *Burgundy pitch* is often used by farriers in making *charges*, and strengthening plasters, also in some of their ointments.

BURNT ALUM. (See *Alum.*)

BUTTER OF ANTIMONY, or muriated antimony, a dark-coloured liquid, possessing strong caustic powers, and composed of antimony and muriatic acid.

It has been highly spoken of as a remedy for quittors and other ulcers of a similar kind; it is certainly a strong caustic, and may be employed in cases where such applications are required.

There is something peculiar, however, in this caustic, which is, that by coming into contact with a moist part, it is immediately decomposed, so that when applied to ulcers, its action is of very short duration.

CALAMINE, or *Lapis Calaminaris.* A metallic calx, which, when powdered, resembles a white earth inclining to a red colour. It is employed for the purpose of drying or healing ulcers which discharge a thin acrimonious matter; it is also mixed with hog's lard, oil, and wax, so as to form an ointment, which is used for the same purposes. This ointment, or cerate, is the celebrated *Turner's Cerate.*

CALOMEL is the most useful of the mercurial preparations, and composed of oxide of quicksilver

and muriatic acid. When prepared, it is a fine white powder, rather inclining to yellow, and very ponderous. It is the most efficacious *anthelmintic* we are acquainted with (See *Anthelmintics*), and an excellent *alterative*. It has often cured that destructive disease termed *farcy*, and has considerable effect in the *glanders*; though it has not hitherto been so employed as to cure that disorder radically. When a brisk purgative is wanted, calomel may be added to the common physic, which is composed chiefly of aloes. In liver complaints it often proves beneficial; and has been given with good effect in obstinate cases of grease, chronic inflammation of the eyes, and diffused swellings of the hind legs.

Though *calomel* possesses all these useful qualities, it must be given with caution, and its effects carefully watched, as it sometimes acts very violently and unexpectedly on the stomach and bowels. A profuse salivation is sometimes the effect of *calomel*; the mouth becoming so sore, and the tongue so swollen, as to prevent the horse's feeding. When these accidents occur, the medicine should be discontinued a short time, and the horse allowed to drink plentifully of water-gruel, linseed infusion, or any other mucilaginous drink. When the bowels are affected, opium is the best remedy; in some cases, where it has produced great irritation about the *anus* or bladder, opium should be given in the form of *glyster*. (See *Glysters*.) If the mouth becomes very sore, let it be washed with a solution of alum, by means of a syringe.

Whenever *calomel* is given, the horse must be kept warm, drink warm water, and have regular exercise. When calomel is given as an anthelmintic, or as a purgative, the dose is from one drachm to two; as an alterative, from fifteen grains to half a drachm. Calomel generally acts upon the kidneys, increasing the discharge of urine. (See *Alteratives* and *Anthelmintics*.)

CAMPHOR, is procured from a Japanese tree, and

brought to Holland, where it is purified from much extraneous matter; from thence it is imported into this country.

Camphor is a medicine of considerable efficacy in the diseases of horses, though scarcely known to farriers as an internal remedy. It is a powerful sedative and antispasmodic; and I think an excellent remedy that can be employed in fevers. When joined with nitre, it gives speedy relief in suppression of urine, or difficulty in staling; except when it arises from inflammation of the kidneys—but in the horse this complaint is generally spasmodic.

Camphor is a good remedy in flatulent cholic, or gripes, particularly if joined with oil of juniper or other carminatives. (See *Carminatives.*) It has been recommended also in locked jaw, mixed with opium. The dose is from one to two drachms; though it may be given, I believe, to a greater extent without danger. The dose I employ is one drachm and a half or two drachms.

As an external remedy, *camphor* is much used; it is generally dissolved in spirit of wine, oil of turpentine, or common oil, so as to form embrocations for strains, bruises, hard swellings, &c. Soap is often added to those solutions, and sometimes oil of rosemary. (See *Embrocations.*)

CAMOMILE. A bitter herb, the *flowers* of which are employed in fomentations. No other use is made of *camomile* in veterinary practice.

CANTHARIDES, or *Spanish flies.* These insects are found adhering to trees of different kinds in France, Germany, and Spain; those from the latter country are considered the best.

Cantharides are so very acrimonious, that they inflame, and excoriate the skin; and hence raise a more perfect blister than any other substance: this property renders them extremely useful in veterinary practice, in which a good *blister* is the most important of all external remedies. *Cantharides* should be finely powdered; but previously to this operation

they should be sifted, that they may be free from a great deal of dust and useless matter, which we generally observe with them. When powdered, they may be either formed into an ointment, a liniment, or a spirituous tincture; but the former is the best form, and most commonly used.

Cantharides are never used as an internal remedy for horses.

CAPSICUM. The pod, when powdered, forms *Cayenne pepper*, which is a most powerful stimulant. I have been informed, it is used with the best effect as a horse medicine in the East Indies, but could not learn precisely what the complaints were in which it was employed, though I believe it was the *flatulent cholic*, or *gripes*. I have seen it given in cases of flatulency, weakness of the stomach, and indigestion, with success, in doses of one drachm, joined with a little powdered aniseed, liquorice, and sirup, so as to form a ball.

CARMINATIVES. Medicines that correct flatulency in the stomach and bowels.

CARAWAY. The seeds are much used in veterinary practice, as a *cordial*, and *carminative*. The essential oil, which contains all the virtues of the seed in a concentrated state, is the most convenient for veterinary purposes, the dose of which is from half a drachm to a drachm: it may be mixed either with ale, milk, or water, into a drench; or formed into a ball with liquorice powder, ginger, and honey. When the seeds are made use of, they should be powdered, but never boiled in any liquid, according to the practice of farriers, as their virtues are thereby, in a great measure, evaporated; nor should they be purchased in powder, for by being kept in that form, their essential oil is gradually dissipated.

In whatever form it may be used, *caraway* is certainly a useful *cordial* and *carminative*. The dose of the *seed* is about an ounce; to which may be added a drachm or two of powdered ginger. It may be useful to observe, that from 20 to 30 drops of *oil of*

caraway, are a useful addition to aloes, in making a purgative ball, or as it is commonly termed, a *dose of physic*. (See *Cordial, Carminatives*, and *Cathartics*.)

CARDAMON SEEDS. There are two sorts of cardamons, the *greater* and *lesser;* the latter are commonly sold in their shells or pods, from which they are easily freed; they are preferred in medical practice probably on account of their more grateful smell and taste, but the larger sort, which are generally termed *grains of Paradise* (see *grains of Paradise*), are better for veterinary purposes, being a stronger stimulant, are better and much cheaper. The lesser cardamons make an elegant cordial, and are possessed of considerable strength; their pods also have the same properties, but in a weaker degree. The dose, when the pods and seeds are powdered together, is from 1 to 3 drachms. *Grains of Paradise* will be noticed in its proper place.

CARBONIC ACID AIR, or *Fixed Air*. In medical practice this air has been employed on account of its *antiseptic* quality, in foul and fœtid ulcers, or in gangrenous wounds. It is generally applied by means of a fermenting poultice, composed of oatmeal and yeast. This poultice has been found serviceable in that disease of the horse's heels termed grease, generally correcting the offensive smell which attends it.

CARROTS are sometimes used as an article of diet, and may be given in moderate quantity, with great advantage to horses that are thick-winded, have coughs, or are disposed to inflammatory complaints, such as grease, inflamed eyes, &c. They appear to be easy of digestion, and very nutritious.

CASSIA. A bark somewhat like cinnamon, both in appearance and taste, but thicker and larger. There are some fine pieces of *cassia* which so nearly resemble cinnamon, as to be not easily distinguishable from it, and are frequently sold for it in the shops. For every veterinary purpose, *cassia* is equal to cinnamon, provided it is well chosen; such parts

should be selected as have a pleasant sweetish taste, succeeded by one extremely hot and pungent: this is generally found in the thinner pieces, which are curled up like *cinnamon.*

Cassia is a strong aromatic stimulant, and an efficacious ingredient in *cordial* preparations. The dose is from 1 to 3 drachms. An essential oil is obtained from cassia, which bears a very high price, but is so excessively powerful, that two drops will impart a strong taste to half a pint of water.

CASSIA BUDS. These nearly resemble cassia in their taste and medical qualities. and may be used for the same purposes.

CASTOR. A peculiar animal substance taken from the beaver. It has been extolled by some practitioners as an antispasmodic and sedative; while others have doubted its efficacy. It is very seldom used as a horse medicine; nor does it seem likely ever to be much employed, there being cheaper and more certain medicines of the same class.

CASTOR OIL. A useful laxative in cases where it is necessary to open the bowels, and at the same time avoid irritation; it is, therefore, extremely proper in fevers, accompanied with costiveness, particularly when there appears to be pain and irritation in the bowels.

The dose is from a pint to a pint and a half.

It has been asserted that *castor oil* is a good remedy for worms; but I have seen it given in this case without effect.

CATAPLASM. (See *Poultice.*)

CATECHU. (See *Japan Earth.*)

CAUSTICS are substances that burn or destroy parts to which they they are applied. The most powerful is the red hot iron, or *actual cautery*, which is often employed in veteritary practice, to remove *spavins*, &c. (see *Firing.*) Many of the other caustics are possessed of great strength, and speedily destroy those parts to which they are applied. Such are the pure alkalies, *potash* and *soda*: the *vitriolic* and *nitrous*

acids, or a solution of silver, quicksilver, or *copper,* in *nitrous acid.* If a solid caustic is wanted, nothing is more convenient than the *lunar caustic (nitrated silver).* The milder caustics are more frequently useful than those we have mentioned, such as blue vitriol *(vitriolated copper),* red precipitate *(red nitrated quicksilver),* burnt alum, verdigris, &c.

The strong caustics are employed to destroy unhealthy or diseased parts; but those of the milder kind are very useful for the purpose of bringing obstinate ulcers into a healing state, without any apparent destruction of parts.

CAYENNE PEPPER. (See *Capsicum.*)

CENTAURY. This herb is a weak bitter, and of no use in veterinary practice.

CERATE. A term given to certain ointments or salves, in which *wax* is an ingredient.

CERUSS, or *White Lead.* This is sometimes used in ulceration of the heels, when the discharge is thin and acrimonious.

It is generally made into an ointment with hog's lard and oil; but perhaps would be found more useful if merely sprinkled on the part in fine powder.

CHALK should be finely levigated or prepared, as it is termed, before it is given. It is sold by druggists in this state; and is a good remedy in diarrhœa, if joined with opium and ginger, or other cordials. It has been found serviceable also in correcting acidity of the stomach, and in that obstinate diarrhœa which frequently destroys horned cattle.

The dose is from one ounce to two ounces.

CHARCOAL. A charcoal poultice has been recommended as an application to the heels, when affected with grease, with a view, perhaps, to destroy the offensive smell with which that disease is accompanied.

CHIO TURPENTINE. (See *Turpentine.*)

CICUTA. (See *Hemlock.*)

CINCHONA. (See *Bark.*)

CINNABAR. A heavy mineral of a dark red colour, sometimes prepared artificially. It is composed of quicksilver and sulphur, and has been employed as an alterative in obstinate coughs and thickness of wind, in doses of half an ounce daily. Cinnabar is the most useless of the mercurials, and may, without impropriety, be dimissed from our Materia Medica.

CINNAMON. This well-known spice is a powerful stimulant, and an excellent cordial; its high price, however, prevents its being used much in cordial preparations; so that when good cassia can be procured, it may be on all occasions substituted for it in veterinary practice.

CLOVES. A stimulant of considerable strength, but seldom employed in veterinary medicine, on account of its high price. The essential oil of cloves is sometimes used in the dose of 20 or 30 drops, in cordial preparations, or in purgative medicine, to prevent sickness or griping.

COLTSFOOT. Though this plant was once considered as a useful remedy in coughs, it is now totally disregarded.

COLOQUINTIDA, or *Bitter Apple.* A violent purgative in the human system; but quite inert in the horse, having produced no perceptible effect in the immense dose of four ounces.

COLOMBO, the root. A good stomachic bitter, much used in human medicine, and though rarely employed in veterinary practice, seems to be worth a trial in cases of indigestion and flatulency.

The dose is about one ounce; it would perhaps be more effectual if joined with ginger or cassia.

CONTRAYERVA. The root is considered by medical practitioners as a mild diaphoretic and cordial, but it is never used in veterinary practice.

COPPER. This metal is a component part of blue vitriol (*vitriolated copper*) and verdigris, two valuble preparations. (See *Blue Vitriol and Verdigris.*)

CORAL, white and red. These act only as *absorbents*, though formerly accounted *anthelmintic.*

CORIANDER, the seed. A weak aromatic stimulant, not used in veterinary medicine.

COWHAGE, or *Cowitch.* A pod produced by a plant growing in the West-India Islands, and other warm climates, where it proves very troublsome to cattle and other domestic animals, on account of the spiculæ which grow upon the surface of the pods; these, when applied to the skin, excite a painful kind of itching. The *down* is a powerful anthelmintic in the human subject, and would probably be found very seviceable in the horse; but I believe it has never been tried. It is generally mixed with treacle or honey.

CRETA. (See *Chalk.*)

CREAM OF TARTAR. (See *Acid Tartareous.*)

CROCUS. (See *Saffron.*)

CUCUMBER, wild. The fecula or mucilaginous part of the fruit, is a violent purgative and emetic, in the human subject, but has not been tried in the horse.

CUMMIN, the seed. A weak stimulant, but its essential oil is a useful cordial and carminative, in doses from half a drachm to one drachm.

DANDELION, though formerly considered as a deobstruent, is now quite neglected, being too inert for any medical use.

DEADLY NIGHTSHADE. This plant has been considered as the most powerful of the narcotic poisons; it has been found, however, a useful medicine, when cautiously employed. Physicians usually prescribe it as a sedative, in doses of five grains, gradually increasing the dose until some perceptible effect is produced. In the horse it has scarcely been tried, nor does it seem likely to supersede *opium* as a *sedative.* The powdered leaves are most commonly employed, but it is also used in the form of extract. The first dose for a horse should be about two drachms of the powder, or one drachm of the extract, which might be gradually increased.

In human medicine, a *decoction* of the leaves is

sometimes employed as a fomentation in cancerous complaints. This might probably be found serviceable in painful tumours, or ulcers of the horse.

DECOCTIONS are made by boiling any medicine in water until its virtues are extracted.

DEMULCENTS. Medicines which have the power of diminishing the effect of acrimonious, or stimulating substances, upon the sensible parts of the body. There are two sorts of demulcents; the one, possessing an oily or mucilaginous quality, sheathes the sensible part, and thereby defends it from the action of the stimulus; the other, being a watery fluid, dilutes the stimulus, and diminishes in a certain degree its power. Among the former may be reckoned, gum arabic, gum tragent, and marshmallow, with various oils: the latter consists principally of water.

DEOBSTRUENTS. Medicines that remove obstructions.

DETERGENTS. A term employed in surgery, for those applications which have the power of cleansing foul ulcers, and inducing a disposition to heal.

DIAPENTE. A compound powder much used by farriers, as a tonic, or stomachic. It is composed of gentian root, bay berries, bithwort, myrrh, and shavings of ivory, of each equal parts; the last article, as well as the myrrh, are now generally omitted.

DIAPHORETICS. Medicines that increase the natural discharge by the skin, which, when they act in so considerable a degree as to occasion sweating, are termed *sudorifics*.

It is extremely difficult to produce any visible effect upon the horse's skin, by means of medicine alone, but when it is assisted by proper exercise, and warm clothing, we can generally give a fine glossy appearance to the coat, though it is very difficult to produce sensible perspiration, unless it be by violent exercise and immoderately warm clothing. The most effectual diaphoretics in the horse medi-

cines are of the hot stimulating kind, combined with antimonial preparations and opium; these, however, can seldom be employed with propriety in the fevers of horses, which are generally an effect of internal inflammation: they are useful only when horses are hidebound, have a rough dry coat, and appear in a state of debility.

Emetic tartar, and other preparations of antimony, minderus's spirit, and camphor, are the diaphoretics which may be employed in febrile complaints with advantage.

DIET. Nothing tends more to the preservation of the horse's health than proper management with respect to his diet, in the regulation of which, it is necessary to consider the exertion or labour that is required from him.

It is a mistaken notion that horses possess the highest degree of strength of which they are capable, while running at grass, in a state of nature, for there can be no doubt that the natural strength might be considerably augmented by high feeding and proportionate exercise, provided it is done gradually.

When a horse, however, is kept upon a full diet, and not allowed sufficient exercise, many dangerous diseases are engendered; to this cause may be attributed the frequency of his inflammatory complaints, and his most dangerous fevers may often be traced to this source; hence also originate swellings of the legs, grease, cough, inflamed eyes, and many other evils.

If a horse's work is moderate, his diet should be so likewise; but when his work is irregular, that is, when he is employed only once or twice a week, and then in hunting, or some violent and long-continued exercise, his diet must be such as to render him at all times adequate to his work; above all things, regular exercise in the intermediate days is indispensably requisite.

Horses that work hard, and constantly, should always be allowed a moderate quantity of beans

with their oats, but on no occasion is barley a proper article of diet.

DIGESTIVES. Medicines which promote suppuration in ulcers, and cause them to discharge a white healthy matter.

DIGITALIS. (See *Fox-Glove.*)

DITTANY OF CRETE. The essential oil of this plant resembles that of origanum, and may be employed for the same purposes. (See *Origanum.*)

DIURETICS. Medicines that increase the secretion of urine; an effect more readily produced in the horse than in the human body. There is a great variety of medicines that act as diuretics; the principal are, the various kinds of turpentine, balsam, soap, the fixed alkalies, nitre, &c.

Diuretics are much used in veterinary practice, particularly in diffused swellings of the legs, or other parts, and grease; when given in moderate doses, they may be continued for several days, and a horse may work without danger during their operation.

DRAGON'S BLOOD. A resinous substance of a dark red colour, which, when pure, is entirely soluble in spirit of wine. Dragon's blood was formerly employed as an astringent and styptic, in fluxes and internal bleedings, but modern practitioners scarcely ever use it. It is still employed by farriers, in the complaint of horned cattle, which they term *red water*, or bloody urine, but without effect; nor is there any disease of the horse in which it is likely to be useful.

DRASTIC. A term applied to purgative medicines that are violent in their action.

DRAUGHTS, *or Drafts.* (See *Drenches.*)

DRENCH. A medicine in liquid form. This is a very inconvenient method of giving medicine to horses, some part of the dose being generally wasted. It is preferable, however, on many occasions, to every other form, on account of the medicine acting in much less time than in a solid form: in flatulent cholic, or gripes, for example, where the symptoms

are extremely urgent and alarming, a proper *drench* will soon relieve the animal, while a *ball* would require several hours to produce any effect. Farriers commonly compose their drenches with ale, whatever the qualities of the other medicine may be, which is extremely absurd, since the properties of the liquid should always correspond with the virtues of the other ingredients. *Cordial drenches*, therefore, may with propriety be made with ale, but those of a contrary tendency should be mixed with water gruel or water.

The best instrument for giving drenches is the horn of an ox; the opening being cut obliquely in the form of a spout. Bottles are sometimes used on an emergency to give drenches, but they are attended with danger, and should be handled cautiously. In giving a drench, the horse's tongue should be held with the left hand, and when the head is sufficiently elevated, the medicine is to be carefully poured into the throat, immediately letting go the tongue, while the head is kept up until the drench be swallowed. Drenches are very seldom given with dexterity, and great part of the medicine is sometimes wasted. Every groom should learn to give them with facility, and always keep a proper instrument in the stable.

EARTH. Horses at camp or grass are sometimes disposed to eat considerable quantities of earth: this should always be prevented, if possible, as it sometimes accumulates, and forms large balls in the intestines, which generally destroy the animal. Horses employed in mills for grinding have been often destroyed in this way. (See *Absorbents.*)

EFFERVESCENCE. An agitation like boiling, produced in a liquid without the application of heat, and caused by the rapid escape of air; for example, when lemon juice and salt of tartar are mixed, an effervescence takes place, occasioned by the extrication of carbonic acid air from the latter.

EGGS. These have been recommended for the improvement of a horse's wind, but they certainly do

not possess any quality of that kind. They are also used for the purpose of mixing oils and balsams with water.

ELATERIUM, or wild cucumber. (See *Cucumber, Wild.*)

ELECAMPANE. The root of this plant is a weak aromatic stimulant, and formerly recommended in coughs, to promote expectoration: farriers use it for the same purpose; but, as we have many medicines of this kind of greater efficacy, it hardly deserves notice.

ELDER. The leaves and blossom are employed, the former in the preparation of an ointment and oil of a green colour, and of little or no use; the latter is used in making a white ointment, formerly recommended in inflammatory affections of the skin, &c. but not more efficacious than simple fat, or lard. There is, also, a distilled water made from it, which is often employed in the composition of eye-waters, but does not appear to possess any medical qualities that do not exist in simple or distilled water.

ELECTUARY OF SENNA, or *Lenitive Electuary.* This is a useful laxative in the human body, but though recommended for the same purpose in the horse by writers on farriery, is certainly too weak to produce any effect, though given in the dose of a pound.

ELEMI GUM. A resinous substance, sometimes employed in the composition of digestive ointments.

ELIXIR, PAREGORIC. A preparation of camphor and opium, but in too dilute a state to be adapted to veterinary practice.

EMETICS. Medicines that excite vomiting. It is very generally believed that horses are incapable of vomiting; I have met with one instance, however, where it occurred spontaneously, and was soon after succeeded by purging.

Medicines that are considered as the most violent emetics in the human system, are generally inert in the horse. A remarkable example of this may be

noticed in white vitriol (*vitriolated zinc*), of which a horse has taken twelve ounces at a dose, without much effect.

Emetic Tartar, or *Tartarized Antimony.* A preparation of antimony (See *Antimony*) and cream of tartar. (See *Acid Tartareous.*) This is a violent emetic in the human subject, even in the quantity of one or two grains; but in more minute doses it is used as a febrifuge.

In the horse it is a very safe medicine, and extremely useful in fevers: it is generally given in doses of two drachms, which may be repeated every day, or even twice a day should the case require it; when the bowels are affected by it, a small quantity of opium may be added. Many practitioners join with it camphor and opium, or camphor and nitre, both of which are often highly useful. Emetic tartar seems to be the best of the antimonial preparations, though others are occasionally preferred; but there is some difficulty in deciding this point; for all the preparations of antimony have so little activity in the system of the horse, that their effects are not often perceptible; we know them to be useful, however, from their frequently subduing or mitigating the disease for which they are employed. Whenever *emetic tartar* is given, or any other antimonial, its effects will in a great measure depend upon the attention and management of the groom. In fevers, the horse should be well littered, and clothed with a rug or blanket, of sufficient width to cover the belly as well as the back. The neck, head, and chest, should likewise be clothed; the clothing, however, must be regulated by the season of the year, and the temperature of the air. The legs should be well hand-rubbed several times a-day, and warm water given. When the antimonial is given to remove surfeit or relax the skin, it may be materially assisted by exercise, and moderately warm clothing.

A late writer on farriery recommends one ounce

of *antimonial wine*, with a decoction of rue and camomile, as a remedy in inflammatory fever. This quantity of antimonial wine contains about four grains of emetic tartar; a dose too minute to produce any effect upon the horse.

EMULSION. A term given to preparations in which oil is blended with water, by means either of mucilage, the yolk of an egg, or a small quantity of alkali. (See *Alkali.*) Emulsions have a milky appearance, and are a convenient vehicle for pectoral medicines, being supposed to possess that quality in some degree.

ENEMA. (See *Glysters.*)

EPISPASTICS. (See *Blisters.*)

ERYNGO, the root. A weak aromatic stimulant, of no use in veterinary medicine.

EPSOM SALT, or *Vitriolated Magnesia.* A neutral salt, formed by the combination of magnesia and vitriolic acid. It is commonly obtained from the water of certain springs, in which it is formed by nature. The virtues of this salt are similar to those of *Glauber's salt.* (See *Glauber's Salt.*)

ESSENCE. This term is applied to essential oils, and very properly, since they generally contain all the medical virtues of the substance from which they are extracted.

Essence of Peppermint. The preparation sold in the shops by this name, is made by dissolving a small proportion of oil of peppermint in rectified spirit, or alkohol, that has been previously tinged with some green colour.

Essence of Mustard appears to be composed of camphor, oil of rosemary, and oil of turpentine, which form a good stimulating embrocation.

ESSENTIAL OILS. The smell, taste, and other qualities of vegetables, frequently reside in a volatile oil, particularly in those vegetables, or certain parts of vegetables, that have a strong odour and taste; as mint, pennyroyal, peppermint, lavender, caraway seeds. anise seeds, juniper berries, lemon peel, santal

wood, &c. This oil being volatile, may be extracted, and procured in a separate state, by distillation; and as it contains all the useful qualities of the substance it was obtained from, is termed an *essential oil*, which is found very convenient in medicine, particularly for veterinary purposes.

ETHER. This is the most volatile liquid we are acquainted with, and evaporates readily in the common temperature of the atmosphere; it must be given, therefore, with great expedition, or a considerable part of the dose will be lost by evaporation. It is a powerful antispasmodic, and may be given with advantage in obstinate cases of flatulent cholic, and other spasmodic complaints. On some occasions it is joined with tincture of opium, or camphor, with good effect.

The dose is about one ounce, which should be mixed with a pint of water.

The high price of Ether prevents its being much used in veterinary medicine. It is a powerful remedy, however, when properly applied; and may be considered as an important medicine.

ETHIOPS MINERAL, or *Sulphurated Quicksilver.* A preparation made by rubbing equal parts of quicksilver and flower of sulphur together, until the mixture becomes black, and the quicksilver invisible.

Ethiops Mineral was formerly considered a very useful medicine; capable of destroying worms, and curing chronic eruptions, and other diseases of the skin. At present it does not appear to be valued much by physicians for any purpose; but whatever its virtues may be in the human body, it is certainly very inert in the horse; and though still employed by farriers as an anthelmintic and alterative, is unworthy of notice, while we can procure so many valuable preparations of quicksilver.

EUPHORBIUM. A gum resin, that exudes spontaneously from a large oriental tree. It is brought to us in small drops, of a pale yellow colour, which

are generally mixed with woody and other extraneous matter.

Euphorbium is found useful in veterinary practice, as an external application. It is generally employed in the form of tincture: sometimes it is mixed into an ointment with hog's lard, mercurial ointment. oil of origanum, oil of bay, &c. being previously reduced to a fine powder. It is also frequently an ingredient in strong blisters, to which it proves a powerful auxiliary. In whatever form euphorbium is employed, it proves extremely acrimonious and stimulating, and is therefore well calculated to reduce callous swellings of the back sinews, or other parts, curbs, windgalls, &c.

The tincture is made by digesting, or steeping, one ounce of the powder in four or six ounces of rectified spirit; frequently shaking the bottle which contains the mixture, and keeping it in a warm place; after eight or ten days it is to be strained off, and kept well corked. Some add to this a little oil of origanum, or camphor. There is another kind of tincture made by digesting the powder in a strong solution of potash, which also acts very violently. In powdering euphorbium, the mortar should be placed where there is a current of air, that the dust which arises might be blown off, otherwise it would get into the nostrils, or throat, and prove excessively troublesome.

EXERCISE. We have observed under the article *diet*, that the horse's exercise should be always proportionate to the quantity and quality of his food; or rather, that the latter should be adapted to the former, in order to preserve him in health. We have further to remark, that in other points of view, exercise is of great importance. In training horses for the turf or the chase, it is by *exercise*, properly conducted, and a well-regulated diet, that we enable him to perform those wonderful exertions that are required from him, and bring his wind to the highest degree of perfection which it is capable of attaining.

In training a horse, whether he be designed for the turf, the chase, or the army, this precaution must always be observed—that his exercise never exceeds his strength. Many horses have been destroyed by neglecting this precaution, particularly in the army, where we often see horses recruited of four years old, and sometimes only three. When first brought to the regiment (perhaps from a considerable distance) they are weak and out of condition, often suffering from strangles, which, from their weak state, do not come forward properly, but affect chiefly the internal part, causing pain and difficulty in swallowing. At this time they are unfit for any kind of work; and require three weeks or a month to be brought into proper condition for the riding school. On the contrary, they are not, in general, allowed half that time, but are brought too hastily into the school, without taking time to reflect, that as they are quite unaccustomed to that, or, indeed, any kind of work, it becomes excessively fatiguing; and to young horses in a state of debility, particularly if they are not immediately attended to, and taken great care of when brought sweating from the school, I am convinced it is often attended with destructive consequences. Exercise, therefore, should always be moderate at first, and adapted to the animal's strength; by increasing it gradually, and in proportion to his condition, he may soon be brought to bear, without inconvenience, that degree of exertion, and velocity of motion, for which he is wanted. Exercise not only prevents disease, but materially assists in the cure of many: thus, in swellings of heels and legs, grease, inflamed eyes, &c. medicine, without proper exercise, seldom effects a cure.

EXPECTORANTS. Medicines that increase the discharge of mucus from the lungs, and thereby relieve cough and difficulty of breathing. There are many medicines which produce this effect in the human body; but in the horse the action of *expectorants* is not easily perceptible. It has been said,

that as a horse breathes only through his nostrils. the effect of such medicines (if they had any) would be shown by a discharge from the nostrils; and as they are not observed to cause such discharge, they must be ineffectual; but in coughing, air is expired by the mouth, and it is not improbable that mucus may be discharged by the lungs at the same time, though this point is difficult to be ascertained with precision. I am convinced, however, that some of the medicines termed expectorants, frequently prove servicable in the horse, by relieving, or curing cough, and difficulty in breathing, or what is termed thickness of wind; among these are squill, and gum ammoniacum; both which I have often found very beneficial in those complaints, although, as we have seen, I cannot say in what manner they operated.

EXTRACT SATURN. (See *Goulard.*)

FEBRIFUGE. A term given to medicines, that moderate or lessen the violence of fever.

FENNEL. The seeds of sweet fennel are, in some degree, stomachic and carminative, in doses from one to two ounces. The essential oil they afford possesses the same quality in a stronger degree.

The dose is from half a drachm to one drachm.

FENUGREEK. The seeds only of this plant are employed for medicinal purposes; by reason of their mucilaginous quality, they are used in making poultices, and sometimes in emollient glysters. Farriers often give them internally, with what view I cannot pretend to say, since they do not appear to be adapted to the cure of any complaint.

FERN. The root of male fern was formerly considered as a remedy for worms, particularly the tapeworm; it seems now, however, to have got into disrepute. I have never heard of its being tried in horses, nor does it seem to deserve our attention.

FERRUM. (See *Iron.*)

FIGS. Mr. Taplin, who some time ago wrote so much *about* "Farriery," recommends figs and liquorice in his pectoral drinks for inflammation of the

lungs, a disease that requires the most powerful remedies. Figs certainly do not possess any medical qualities worth notice.

FIRING. A severe operation often performed on the horse, and on some occasions highly useful. It consists in the application of a red-hot iron to the skin, so as to burn without penetrating through it. The violent inflammation this occasions, rouses the absorbent vessels into action, by which callous or even boney swellings are sometimes dispersed. The diseases in which it is most efficacious are spavins, ringbones, old callous swellings about the back sinews, in consequence of strains, and windgalls. Firing is supposed to brace the skin, and cause it to act as a bandage on the subjacent parts. A blister is often applied to the part immediately after firing, or on the following day, to render it more effectual. It is necessary to observe, that the milder remedies should always be tried before this severe operation is had recourse to. Firing has been recommended for the purposes of strengthening the back sinews and hocks of colts, to prevent strains, and what is termed breaking down; but it is difficult, if not impossible, to conceive how the workmanship of the Deity can be improved by such means.

It has been asserted, that when firing is employed for old callous swellings of the back sinews, the swelling should be previously reduced by blistering; that firing would then prevent any return of the complaint, whereas if the firing were performed in the first place, it would tend to fix the swelling, and render it incurable. I do not believe there is any grounds for this opinion.

The hot iron is the most effectual remedy for those ulcers of the skin, which depend upon farcy or glanders.

FIXED AIRS. (See *Carbonic Acid Air.*)

FIXED ALKALI. (See *Alkali.*)

FLAG, or *Yellow Water Flag.* The juice of this plant, which grows plentifully near rivers, is a strong

purgative in the human system, but has not been tried in the horse.

FLIES, SPANISH. (See *Cantharides.*)

FLOWERS OF SULPHUR, or *Brimstone.* This is much used by farriers as an ingredient in alterative medicine. It is procured from the impure brimstone or sulphur, which is found in the neighbourhood of volcanoes, by *sublimation.*

Flower of Sulphur is not perfectly pure, however; it still retains a small quantity of vitriolic acid, and other impurities, which may be carried off by washing; it then forms the milk of sulphur, or washed sulphur of the shops.

Flower of Sulphur is sufficiently pure for veterinary purposes, and is generally given in the dose of one ounce. It is commonly joined with nitre and antimony, or nitre and resin; and is then thought to improve the coat and general condition of the horse, or remove swellings of the heels, and surfeit. I have given sulphur in a variety of doses, from one ounce to eight ounces daily; but the only effect I could perceive was that of a mild laxative, and that did not take place until four ounces were given at a dose. It made no alteration in the coat or skin, though the patients were hide-bound, and had rough, dry coats. From the observations I made on this occasion, I do not conceive that *sulphur* is of much use as an internal remedy in the horse, or that it possesses any diaphoretic power. As a topical application in mange, it is certainly very efficacious, particularly if mixed with other remedies.

Sulphur is very serviceable to young dogs, when they have any appearance of plethora or cutaneous disease, generally acting as a mild laxative; it may be given to them in milk, from one tea-spoonful to two or three.

FLOWERS OF BENJAMIN. These are procured from gum Benjamin or Benzoine, by sublimation. They are of a beautiful white colour, very fragrant, and extremely light. In human medicine they are

employed as a remedy for coughs and other pectoral complaints, but they are scarcely ever used in veterinary practice; a sufficient dose for a horse would be very expensive, and it is probable that gum Benjamin would answer every purpose that can be obtained from the flowers. (See *Benjamin, Gum.*)

FLOWERS OF ZINC. These also are obtained by sublimation from the metal named zinc. This medicine is said to possess a considerable tonic power. It has not, however, been given to horses, nor is it probable that it would be found a useful medicine, since white vitriol (*vitriolated zinc*), a more active preparation of the same metal, has been given to the amount of eight ounces and more, without producing any sensible effect, but it is said that in small doses, from half an ounce to one ounce, white vitriol discovers a tonic quality.

Should any one be inclined to try the flower of zinc, they may safely begin, I think, with the dose of half an ounce, and gradually increase it, until some effect is observed. The diseases to which it is adapted are those arising from debility.

FOXGLOVE. A poisonous plant which grows plentifully in this country, chiefly in elevated, dry situations. The leaves were formerly employed as an application to ulcers and scrophulous tumours; but from its deleterious quality, was seldom used as an internal remedy. *Foxglove* is now found to possess a remarkable power of diminishing the frequency of the pulse, therefore it will probably be found a valuable medicine in those *internal inflammations* which so frequently occur in horses. Their most dangerous fevers depend on this cause, and when the inflammation attacks an important part, such as the lungs or bowels, it generally terminates fatally, unless the most powerful remedies are employed at an early period. *Foxglove*, on these occasions, would perhaps greatly assist the other remedies, particularly in inflammation of the lungs. It has been lately introduced into veterinary practice, but was not

attended with the expected success. The complaint in which it has been chiefly employed, is swelling of the legs, but it does not appear to do much good. I have several times given it by way of experiment, and though I cannot say in what particular cases it will be found curative, yet I am of opinion, from the observations I then made, that it will be found, under proper management, a valuable remedy in those fevers which depend on internal inflammation, as also in catarrh, when the inflammatory symptoms are considerable. I believe no one will dispute, that if we can find a method of diminishing inflammatory action in the internal organs, without depriving the system of so great a quantity of the vital fluid, as is found absolutely necessary, on such occasions, it will be an invaluable discovery. No medicine appears better adapted to this purpose than *foxglove*; and it is to be hoped that its virtues will soon be thoroughly investigated.

Foxglove is an active medicine in the horse, and cannot be given with perfect safety in larger doses than half a drachm, but this must be gradually increased until some effect is perceived; the horse, however, must be carefully watched, that the effect may be seen; for if too much be given, the stomach is sometimes materially injured.

FRANKINCENSE. A resinous substance, similar to yellow resin, as to its medical qualities.

GALANGAL, the root. This is a warm stomachic bitter, calculated to remove indigestion and flatulency, and to promote the appetite.

The dose is about an ounce.

GALBANUM. A gum resin; similar in its medical qualities to gum ammoniacum, but inferior in efficacy.

The dose is about six drachms.

GAMBOGE. A yellow resinous substance, which in the human system acts as a violent purgative; sometimes as an emetic also, even in small doses. In the horse it is not much employed, I believe

scarcely ever, but I have found it to be a useful medicine in worm cases, facilitating the operation of aloes, and considerably increasing their purgative quality.

The dose of *gamboge*, when given without aloes or any other purgative, is from two to three drachms; which should be mixed with three drachms of Castile soap.

GALLS. An excrescence from the oak tree, produced by the puncture of an insect. *Galls* are powerfully astringent, but not often employed internally; they may, however, prove useful in conjunction with other remedies, in suppressing obstinate diarrhœa.

The dose is from two drachms to four.

GARLIC. This is often employed by farriers as a remedy for coughs and thickness of wind; and I believe that in coughs of the chronic kind it has sometimes been found efficacious.

The dose is from one ounce to two ounces.

The cloves are separated and pounded in a mortar until they form a sort of paste, which is formed into balls, with liquorice powder: sometimes they are boiled in milk, and given in the form of a drench.

GENTIAN, the root. A strong and very pure bitter, well calculated to remove weakness of the stomach and indigestion. It generally requires to be joined with stimulants, such as ginger, cassia, myrrh, cascarilla, &c. and, when any acidity is suspected to exist in the stomach, a small quantity of *soda* is a useful addition. Gentian is the basis of that famous horse powder termed *diapente*. Gentian root sometimes becomes rotten and useless: the purchaser should, therefore, examine before he buys, and choose such parts as are sound, rather tough, and extremely bitter. It is to be feared, that the powdered gentian of the shops is not so good as it should be, and it is to be lamented that druggists, in general, think any thing good enough for horses.

The dose of pure gentian is from three drachms to six.

GERMANDER. A low shrubby plant, bitter, and somewhat astringent; but not sufficiently strong for veterinary purposes.

GINGER. A root brought from China, and the East and West Indies.

There are two sorts kept in the shops, the black and the white ginger; the latter is preferred for culinary purposes, on account of its more pleasant flavour, but the former seems to be equal, if not superior in strength, and being considerably cheaper, and more easily powdered, I think it deserves a preference as a horse medicine.

I consider ginger as the most useful stimulant in the veterinary materia medica; when joined with aromatics, caraway seed, anise seed, cummin seed, &c. or their essential oils, it forms an efficacious cordial, and with emetic tartar and opium, an excellent diaphoretic for giving gloss to the coat, and relaxing the skin. Joined with bitters, it makes a good stomachic; with squills, an expectorant, often relieving obstinate coughs.

Ginger is extremely beneficial in weakness and flatulency of the stomach, and assisted by other remedies, such as oil of juniper, or camphor, it seldom fails of curing the flatulent cholic, or gripes.

The dose is from one drachm and a half to three or four drachms.

It should be recently powdered when used; but in a well-stopped bottle the powder may be kept a considerable time, without losing its strength.

GINSENG. A moderately warm aromatic root, highly esteemed by the Chinese, but in this country scarcely ever employed.

GLAUBER'S SALT, or *Vitriolated Natron.* This neutral salt, is composed of the vitriolic acid and soda, or the mineral alkali, which is now termed natron in the London Pharmacopœia. In the human subject it is an efficacious purgative; but in the horse extremely inconvenient, on account of the

large quantity required to produce a laxative effect. The dose is about a pound.

GLYSTERS. This form of medicine is extremely useful, though much neglected. The best instrument for administering them, is a polished pewter tube, about one foot in length, the bore about half an inch in diameter; one end of this tube is to be so made that a bladder may be securely fastened to it, the other finely polished, so that there may be no danger of wounding the intestine. The bladder which is fixed to it, should be large enough to contain a gallon, at least, or six quarts.

GOLDEN SULPHUR OF ANTIMONY. This preparation of antimony is scarcely known to farriers; and I believe seldom used by veterinarians. It may be found useful, however, in obstinate diseases of the skin, either alone or joined with mercurials, such as calomel, or sublimate, *muriated quicksilver*.

The dose is from one drachm to two, perhaps even more may be given with advantage; but it is adviseable to begin with a small dose

GOULARD'S EXTRACT. Extract of saturn, or lead. This is made from litharge and vinegar, by simmering them together, over a gentle fire, until the vinegar has dissolved as much as it is capable of. Goulard, therefore, is nothing more than a solution of litharge in vinegar. It is a very useful application in cases of external inflammation, and may be used either as a lotion, or in the form of poultice. Goulard lotion is made by mixing half an ounce of the extract to a pint of water; some add to this a little camphorated spirit, or some distilled vinegar; but when the lotion is intended for the eyes, there must be a much larger proportion of water, not less than a quart.

Goulard poultice is made by mixing as much of the lotion with bran, linseed, meal, or any proper materials for poultice, as will give them a proper consistence.

Goulard is never used undiluted, nor is it given internally.

GRAINS OF PARADISE. A warm stimulating seed, often used by farriers in the diseases of horned cattle, as a cordial; and where medicines of that kind are required, it is certainly very proper; but it is very necessary to consider the case well before this medicine is employed, for if the complaint be of an inflammatory nature, grains of Paradise being a powerful stimulant, may do much injury.

The dose is from three to six drachms.

GROUND IVY was formerly considered as an excellent remedy in pulmonary complaints; but is is now disregarded by medical practitioners, and is certainly useless in veterinary practice.

GUAIACUM. The wood and resin. The former is sometimes employed in human medicine, as an ingredient in alterative decoctions, but never in veterinary practice. The resin, commonly called gum guaiacum, is sometimes used as an alterative. Farriers employ it also in what they suppose to be rheumatic lameness, but without any advantage, I believe. Rheumatism seldom attacks horses: when it does occur, purgatives, with moderate exercise, are the best remedies.

The dose of gum guaiacum is from half an ounce to six drachms.

There is a volatile tincture of guaiacum sold in the shops, which seems better adapted to rheumatic complaints than the gum alone; but its use should be preceded by a purgative.

The dose is one ounce and a half.

GUINEA PEPPER. (See *Cayenne Pepper.*)

GUM. There are various kinds of gum, which may be distinguished by their solubility in water, and by forming therewith a mucilage. The principal are, gum arabic, gum dragent, and India gum. The two first are the best. Gum dissolved in water makes useful drinks in inflammatory complaints of the bowels, kidneys, bladder, and lungs.

GUM RESIN. A natural mixture of gum and resin.

HARTSHORN. The horns of stags were formerly supposed to possesss peculiar qualities, but upon a chemical analysis they are found to be very similar to bone, which is now substituted for it, upon all occasions.

HARTSHORN. Spirit and salt. (See *Ammonia.*)

HAY. Clover, and the coarser kinds of hay, are said to be best adapted to draft horses, and such as are employed in slow, but laborious exercise; while saddle horses are thought to do better with the finer kinds of hay. I believe, however, the former is most nutritious, and if the quantity allowed is suited to the horse's employment, it may be given to every kind of horse with advantage.

HEMLOCK. A strong narcotic; but on many occasions a useful medicine, possessing, like opium, an anodyne quality, but not so certain in its effect. It is said, however, not to produce costiveness like opium; and, as far as I have been able to judge, this observation holds good with respect to the horse. The complaint in which it has been chiefly employed in veterinary practice, is obstinate cough, depending upon irritability, in which it often proves serviceable. The leaves are to be carefully dried and powdered. The powder must be kept in a well-stopped bottle, from which the light should be excluded.

The dose is about a drachm; but it may be gradually increased to a much larger quantity.

There is an extract made from hemlock, which, when prepared, is a very convenient form, and not less efficacious than the powder.

The dose is about a drachm, but this also may be gradually augumented to a considerable quantity.

A decoction of green hemlock, is said to be a useful fomentation in painful wounds and tumours.

HENBANE. This plant also is a powerful narcotic, and free from the constipating effect of opium.

It has not hitherto been used in veterinary medicine, though likely to be found beneficial. I have tried a solution of the extract in water, in chronic inflammation of the eye, where the interior parts were very irritable, and I think with considerable effect. It certainly deserves a farther trial in this way.

The seeds are said to be the most powerful part of the plant; but the powdered leaves and the extract are more commonly employed.

HELLEBORE, white and black. The root of this plant, particularly the white hellebore, is extremely acrimonious, for if wounded while fresh, it emits a juice capable of blistering the skin.

Powdered white hellebore is often employed as an ingredient in blisters. It is used also, in ointments for the mange, and other cutaneous diseases. A decoction of white hellebore is often employed for the same purpose; but other medicines are generally added to it, as sulphur vivum, turpentine, white vitriol, or alum. Hellebore has been tried as an *internal* remedy in the horse; but its effect was so violent, even in the small dose of half a drachm, that it is now considered a very dangerous medicine.

BLACK HELLEBORE is never used in horse medicine.

HOG'S LARD. An article of some importance in veterinary surgery, being the basis of almost every ointment.

HONEY. A small quantity of honey dissolved in linseed infusion, is often used in those troublesome coughs, which arise from irritation, and serves in this way as a good auxiliary to more important remedies. Honey is sometimes added to a solution of alum, as a lotion for the mouth, when it is inflamed and sore.

HOREHOUND. A bitter herb, with some degree of roughness or astringency.

Horehound is rather a popular remedy for obstinate coughs, asthmas, and other complaints of the lungs, but has been very seldom employed in vete-

rinary practice; it may, however, be used in chronic cough, when the usual remedies fail, either in the form of powder, or decoction.

No great precision is necessary in adjusting the dose; one or two ounces of the powder, or a quart of the decoction may be given at once.

HORSERADISH. The root of horseradish, when fresh, is a powerful stimulant. All its virtues may be extracted by distilling the root with water, or spirit; in which state it may be kept a long time without losing its strength. Horseradish water, with a small proportion of spirit, is a good medicine in cases of flatulency and indigestion, and is the most convenient form in which it can be given.

HYSSOP. This plant has been esteemed as a *pectoral*, but it is seldom employed in modern practice; nor as a veterinary medicine is it worth notice.

INFUSIONS. A medicated liquid, made by pouring boiling or cold water on any medicine whose virtues it is capable of extracting.

INDIAN PINK. Though the root of this plant is often employed for the purpose of destroying worms in the human body, yet it does not seem at all adapted to the same purpose in the horse.

IPECACUANA. There are few medicines of greater importance in medical practice than the root of ipecacuana; but it has so little effect on the horse, though given in very expensive doses, that it is not likely ever to be considered as an article of our Materia Medica. Its principal use, in human medicine, is to excite vomiting, an effect it cannot produce in the horse in the largest dose. Combined with opium it acts as a sudorific in the human body; but for the horse we do not know any medicine, I believe, that is capable of exciting *sensible* perspiration, or sweating, with any degree of certainty; though it is easily brought on by violent exercise, or immoderately warm clothing, and sometimes happens spontaneously. Still, however, ipecacuana may promote the

insensible perspiration, like emetic tartar; and opium may be a useful addition to it.

A mixture of opium, ipecacuana, and vitriolated tartar, one drachm of the two first, to one ounce of the last, forms the celebrated *Dover's Powder*, (*Compound Powder of Ipecacuana*) which has been recommended by a late veterinary writer.

ISINGLASS. This is said to consist of the dried membranes of the sturgeon, or some fish resembling it; the mode of preparation, however, is kept a profound secret. When dissolved in water it forms a strong mucilage; which is a useful emollient, and serves to sheathe the bowels, bladder, &c. when inflamed or irritated.

IRISH SLATE. An earthy substance, not used in veterinary practice.

IRON. A metal found abundantly in almost every country, but scarcely ever in a pure metallic state, to which it is brought by various artificial processes.

Iron is the basis of several medicines, all of which, in the human system, act as powerful tonics; but in the horse this quality does not appear in so high a degree, and frequently is not perceptible. The preparations of iron, are green vitriol (*ferrum vitriolatum*), muriate of iron, rust of iron, tartarized iron, and others, each of which will be described in its proper place.

JALAP. In the human body, the root of jalap is a certain and efficacious purgative, and there is scarcely a book on farriery, in which it is not recommended as an ingredient in purgative balls, or physic: which practice is still followed by farriers, who generally put two or three drachms of jalap into every dose of physic. It has been ascertained, however, first at the veterinary college, that jalap has no purgative effect on the horse, though given in considerably larger doses than farriers ever employ; but I have observed, that in a very large quantity it occasions sickness, and some degree of purging

though its effect in this way is by no means sufficient to induce any one to employ it as a purgative.

I once gave eight ounces of jalap at one dose to a glandered horse, that was in other respects healthy, and had not been taking any other medicine: in about six hours the horse appeared sick, and in pain; he refused both food and water; during the night he appeared to have had some small watery stools; several of which were perceived also the next day, but they were in very small quantity, and accompanied with pain. The sickness continued all the day, and on the following he recovered.

Hence we find that jalap may with justice be dismissed from our Materia Medica.

JAMAICA PEPPER, or allspice. This is a good carminative, though not very powerful. It may be given in doses from half an ounce to an ounce; in flatulency of the stomach and bowels, and may be used also as an ingredient in cordial medicines.

JAMES'S POWDER. Though the preparation of this medicine has been hitherto kept secret, there is no reason to doubt its being composed chiefly of antimony, and nearly the same thing as that which is sold in the shops, by the name of *antimonial powder*. (See *Antimony*.) I can venture to assert, that as a horse medicine, this is as useful and efficacious as *James's powder*. It is an excellent medicine in fevers of every kind; and though usually given in the small dose of a scruple, or half a drachm, may be exhibited with perfect safety, and better effect, in a much larger quantity. I never give less than two drachms, and sometimes three, and I have seen even one ounce given at a dose without the least inconvenience. It seems to act on the skin like emetic tartar, and promote the insensible perspiration, but I do not think it so certain in its effect as emetic tartar: it is sometimes joined with opium, camphor, nitre, or ginger, according to the nature of the disease: with ginger it forms a good medicine for horses that are hide-bound; but this compound is not

proper in fevers, or any complaint arising from inflammation.

JAPAN EARTH, improperly so called, being an extract of an India plant. It possesses a considerable astringent power, and is sometimes found beneficial in those *diarrhœas* or loosenesses, which are caused by weakness and relaxation of the intestines. It may be employed also in *diabetes*, or profuse staling, with alum, opium, ginger, or other remedies suited to the particular circumstances of the case.

The dose is from two drachms to three or four.

JESUITS BARK. (See *Bark.*)

JOHNSWORT. There is an oil of johnswort kept by the druggists, which appears to be nothing more than common oil, coloured with verdigris. The herb was formerly employed in fomentations, but is now thought unworthy of notice.

JUNIPER. Many virtues have been attributed to the *berries* of this shrub, but without any foundation, except as to its *diuretic* and carminative qualities, which it certainly possesses in a considerable degree. Juniper berries generally form a part of diuretic balls and drenches; they are recommended also in flatulency of the stomach and bowels.

The dose is from one ounce to two ounces.

Juniper berries are often injured by keeping; becoming dry, shrivelled, or nearly rotten. The purchaser should choose such as are plump, rather heavy, and moist internally.

An oil is obtained from juniper by distillation, which seems to be the part on which the virtues of the berry depend. Oil of juniper is an excellent carminative and diuretic: the dose is from one drachm to two. It is generally highly adulterated with oil of turpentine, but this admixture does not injure it materially; oil of turpentine being very similar to it, in its medical qualities, though not so powerful.

KALI. This is the new name which the London

college of physicians has given to pure vegetable alkali, or potash. (See *Potash.*)

KERMES MINERAL. A red powder prepared from antimony, nearly the same as the golden sulphur of antimony, and recommended as an alterative in doses from one to two drachms. (See *Antimony*, and *Golden Sulphur of Antimony.*)

KINO. A resinous substance, possessing a strong astringent quality; a good remedy in diarrhœas which depend on relaxation of the intestines.

The dose is from two to four drachms.

LAC. A resin of a dark colour, deposited by an insect of the East Indies on the small branches of trees. It is now employed only in the composition of sealing-wax and varnishes.

LADANUM. A resinous substance brought from Candia. It has been recommended as a pectoral medicine, but probably does not possess any quality of that kind, as it is now used only as an ingredient in a warm stimulating plaster, which is of no use in veterinary practice.

LAUDANUM. A popular term for tincture of opium. (See *Opium.*)

LAVENDER. A plant whose distilled water and fragrant oil are employed in medicine, but not in the veterinary practice.

LAUREL, or *Bay.* The leaves of bay are used only in *fomentations.*

LEAD. Many useful preparations are made from this metal, among which are litharge, Goulard's extract, sugar of lead, and the following.

LEAD, RED, or *Minium.* This is a red powder, made by keeping lead in a high degree of heat: it is used in the composition of plasters.

LEAD, WHITE, is commonly made by exposing thin sheets of lead to the vapour of vinegar, by which it is converted into a white powder. White lead is often employed in the composition of healing and softening ointment, for horses that are subject to cracked heels.

LEOPARD'S BANE. This plant has been recommened as a febrifuge, but is never employed in veterinary medicine.

LIME is sometimes used as a caustic in that disease of the horse's foot termed canker. It is preferred for this purpose on account of its absorbing the moisture which forms upon the diseased parts, and which is thought to be inimical to the cure. Lime-water is recommended in the disease termed diabetes, which consists in a profuse discharge of limpid urine, causing weakness, emaciation, and hectic fever.

I have seen it used, however, in two cases without success. Lime-water is made by mixing lime with a large proportion of boiling water, stirring the mixture for some time, and afterwards pouring off the transparent liquor, which is to be carefully excluded from the air. During the whole process, indeed, there should be as little exposure to air as possible.

LINIMENT. A term given to external applications of the oily kind, but of a consistence rather thicker than oil.

LINSEED. These seeds abound with oil and mucilage, and are well adapted to the composition of those emollient drinks that are so useful in inflammations of the bladder and bowels, or complaints of the urinary passages. A strong mucilaginous drink may be made without bruising the seeds, either by decoction or infusion.

LIQUORICE. An extract made from liquorice root, and supposed to be of use in relieving cough. In the horse it is not applicable to this purpose, as its good effect depends upon its gradual solution in the mouth, so as to be constantly lubricating the throat. Many writers, however, recommend liquorice in their pectoral and cordial drenches, probably with a view to render them more palatable.

LITHARGE. A calx of lead employed in making Goulard's extract, and diachylon plaster

LOGWOOD. An extract is made from logwood which possesses a considerable astringent power: it is often employed by medical practitioners in diarrhœa depending upon relaxation of the bowels, and though it has not yet been introduced into veterinary practice, it would probably be found a useful medicine in similar complaints of the horse, and deserves a trial in cases which have resisted the common remedies.

It may be given in doses from two to three drachms. Alum, opium, and some aromatic, such as cassia, are often joined with the *extract*, and sometimes chalk.

MACE. A pleasant aromatic spice, too expensive for veterinary purposes; nor is there any complaint in which it is particularly required, as cassia, cardamoms, caraway, and anise seed, are more effectual, and considerably cheaper.

MADDER. This root was formerly used in medicine as a remedy for jaundice. Farriers still employ it for the same complaint, which they term the *yellows*, both in horses and horned cattle: in the former, the disease most commonly arises from increased action, or inflammation of the *liver*. Little reliance is to be placed on madder.

The dose is about one ounce.

MAGNESIA. A white powder, so extremely light, that a sufficient dose could not be given to a horse without great inconvenience. It is a very useful *absorbent* in the human body, and well calculated to remove *heart-burn*, by destroying any acidity that may exist in the stomach; it has also the advantage of acting as a gentle laxative. But, in the horse, chalk, or either of the fixed alkalies, answers the purpose equally well; and if a laxative effect is required, a small dose of aloes may be added.

MAIDEN HAIR. An old remedy for coughs, but not proper for veterinary practice.

MALACCA BEAN. The acrid matter which renders this bean useful, is contained between two

membranes, which cover the kernel. The Malays employ it for destroying fungous, or proud flesh; and, from its corrosive quality, it would probably be found very serviceable as an external application in horses.

MALLOWS. This plant is useful in the composition of emollient drinks, from the mucilage it contains; fomentations, glysters, and poultices, may also be made with it.

MALT is very serviceable to horses that are recovering from fever; it is useful, also, when the system is weakened by large abscesses, which discharge copiously, and in almost every case depending on debility.

It appears to be easy of digestion, and very nutritious, though not so stimulating as oats. Green malt has been recommended for improving the condition of horses, and giving them a smooth, glossy coat. Infusion of malt is sometimes given with advantage to sick horses; but they generally require to be drenched with it, which is a great inconvenience. It is always adviseable to employ malt that is broken, as it is more readily digested, and requires less mastication in that state; and if a horse can be induced to eat in the form of a *mash*, it is still better. (See *Mashes*.)

MANNA, a gentle laxative, but never used in the diseases of horses.

MARJORAM. An agreeable aromatic herb, whose essential oil possesses nearly the same properties as the oil of origanum; a remedy much used by farriers in strains, bruises, &c. but always mixed with other oils or spirits, such as oil of elder, camphorated spirit, &c.

MARSH MALLOW. This plant contains rather more mucilage than common mallows, and is therefore better calculated for making mucilaginous or emollient drinks, glysters, or fomentations.

The *root* is the best part, which, if carefully dried may be kept a long time. These mucilaginous drinks

are very useful when the bowels or bladder are inflamed or irritated by too strong physic, or when there is any pain or obstruction in the urinary passages. They should be given frequently in the course of the day, and may occasionally be made the vehicle of more active medicines. Any thing which contains mucilage in sufficient quantity may be employed for the purpose of making emollient drinks.

MARUM, or *Syrian Herb Mastich.*—This plant, when dry, is extremely stimulating, and excites violent sneezing when applied to the membrane of the nostrils, for which purpose it is employed by medical practitioners: it is inapplicable to any purpose in the veterinary practice.

MASHES. A kind of medicated diet, and generally composed either of bran or malt. Bran mashes are made by pouring boiling water on fresh, sweet bran, in a pail, so that the mixture, when stirred, may be about the consistence of a soft poultice; it is then to be covered over, and not given to the horse until sufficiently cold. When it is thought necessary to steam the head, as it is termed, that is, for the horse to inhale the vapour as it arises, the mash is put into the manger while hot, and some even put it into a nose-bag, and secure it to the head, which is a bad practice, as it impedes respiration. *Steaming the head* is recommended in strangles, colds, and sore throats.

Bran Mashes form a very proper diet in fever, and all inflammatory complaints; they are useful, also, as a preparative to *physic*, serving to remove any indurated fœces there may be in the bowels, whereby the operation of the medicine is rendered more safe and effectual. *Mashes* are a necessary diet also while the *physic* is operating. In making *malt mashes*, the water should be considerably below the boiling point, otherwise the malt would clot, and be spoiled. These are given for the purpose of re

cruiting strength, when a horse is debilitated from fever, or any other cause. (See *Malt.*)

MASTICH. A resin, used only in the composition of varnishes.

MEADOW SAFFRON. The root of this plant is a powerful diuretic in the human system, but its effect on the horse is not known.

MECHOACAN. The *root* was employed as a purgative before *jalap* was known. It is much weaker than jalap, nor does it possess a single quality which can recommend it as a horse medicine.

MELILOT. This plant was sometimes employed in the composition of *glysters*, and a plaster, but is now seldom applied to any medical purpose.

MERCURIALS. Preparations of quicksilver.

MERCURIAL OINTMENT. This is made by rubbing together, in a mortar, quicksilver and hog's lard, in various proportions, according to the strength required, until the former disappears, and the mixture assumes a dark blue, or lead colour.

In the strongest *mercurial ointment* of the shops, there are equal parts of quicksilver and lard; these are the best proportions in which it can be made, as it is easily made weaker afterwards, by the addition of lard. In medical practice this ointment is employed chiefly for the purpose of introducing the quicksilver into the system, which is done by rubbing it for some time on the skin: this is said to be the most safe and effectual method of curing the venereal disease; but in the horse, considerable difficulty and inconvenience attend this operation, though it may be made to affect the system. Thus, if we wish to introduce mercury into the circulation, it is better to give some preparation internally. (See *Quicksilver.*)

Mercurial Ointment, however, is often employed in veterinary practice, as an application to callous swellings, or enlarged joints; it may be mixed with camphor with advantage in those cases; and is certainly much more efficacious when converted into

a blister, by the addition of cantharides, of Spanish flies. In this state it is a good remedy for bog spavin, or other swellings of the hock joint.

Mercurial Ointment is said to be an effectual remedy for the *scab* in sheep, and is often an ingredient in ointments for the *mange*. In making *mercurial ointment* the operation is considerably expedited by using a small quantity of old suet, or tallow that is rancid.

Persons unacquainted with pharmacy commonly prefer *mercurial ointment* that has been recently prepared. It is said, however, that old and rather rancid ointment is more powerful, particularly if rubbed for a short time in a mortar before used.

MERCURY. *Quicksilver* is commonly distinguished by this name; the various preparations of which will be described in their proper places. (See *Calomel, Sublimate, Cinnabar, Æthiops Mineral, Turpeth Mineral, Red* and *White Precipitate, Calx of Quicksilver, Mercurial Ointment*, and *Quicksilver.*)

MEZEREON. A root much used in medicine, in venereal and rheumatic complaints, but not calculated for veterinary purposes.

MILLIPEDES, *or Hog's Lice.* These were formerly employed by medical practitioners as a diuretic; but now quite disregarded.

MINDERUS'S SPIRIT. A neutral mixture, formed by the combination of *ammonia*, with *acetous acid*, or distilled vinegar. It is much used by medical practitioners as a *diaphoretic*, and though rarely used by veterinarians, I think I have seen it do good in febrile complaints, by relaxing the skin; in one case it occasioned sensible perspiration.

The dose is from eight to ten ounces.

MINERAL WATERS are too weak for veterinary purposes. It has been remarked by experienced persons, that waters impregnated with saline bodies, which are commonly said to be *brackish*, are generally injurious to horses; and I have observed that horses seldom do well on the coast, where the great-

er part of the water is in this state. This may arise from their not drinking a sufficient quantity for the purposes of digestion, on account of its disagreeable taste; for they often receive much benefit when at grass, in such situations.

MINT. This is a valuable herb, and grows very abundantly. There are two kinds used in medicine, viz. *Spearmint*, and *Peppermint*. The former is an excellent carminative, and generally affords relief in flatulency of the stomach and bowels, and that complaint which arises from it, termed gripes, fret, or flatulent cholic.

Peppermint, however, is considerably stronger, and I think more certain in its effect; all the virtues of mint reside in an oil, which it affords plentifully by distillation; and this is the only convenient form in which it can be employed for veterinary purposes, but it requires to be highly diluted with water, with which it mixes very readily, if previously dissolved in a small proportion of rectified spirit, or rubbed in a mortar with mucilage and sugar.

The dose of oil of peppermint is from twenty drops to half a drachm: of spearmint, from forty drops to one drachm.

This is generally found a sufficient quantity, but may be increased if it prove ineffectual.

It is necessary to distinguish carefully between those pains of the stomach and bowels, which arise from inflammation, and such as are caused by spasm, or flatulency. In the former, *mint* is very pernicious, in the latter, an excellent remedy.

MITHRIDATE. The name of an elaborate and absurd preparation, of which *opium* was the principal ingredient. The London college have substituted for it a much neater and more efficacious formula, which they term *opiate confection*.

MOSAIC GOLD. A combination of tin and sulphur, of a metallic appearance, though soft, and of a golden colour: it is not used in medicine.

MOXA. A light fibrous substance, somewhat like

very fine tow. In eastern countries it is employed to remove deep seated pains, being set on fire on the affected part, so as to burn and produce an eschar; it is therefore nothing more than the actual cautery, which is much more conveniently applied in veterinary practice, by means of the hot iron. (See *Firing.*)

MURIATES. Combinations of muriatic acid, with alkalies, earths, or metals. *Muriatic Acid.* (See *Acid Muriatic.*) *Muriate of Antimony.* (See *Butter of Antimony.*) *Muriate of Quicksilver.* (See *Sublimate.*) *Muriate of Soda.* (See *Salt.*)

MUSK. An animal substance, remarkable for its powerful odour: in medicine it is employed as an antispasmodic, but its extravagant price has prevented veterinarians from giving it a trial.

MUSTARD. Though chiefly employed for culinary purposes, it deserves to rank rather high in our Materia Medica, particularly as an external application. When flour of mustard is made into a thin paste with water, and carefully rubbed on the skin for some time, it excites considerable inflammation and swelling. This property renders it extremely useful in cases of *internal* inflammation, particularly when the bowels or lungs are affected. This paste is rendered stronger by the addition of oil of turpentine.

MUSTARD may be given internally with good effect, in cases which require strong stimulants.

MYRRH. A gummy resinous substance, of a pleasant smell, and a bitter pungent taste: it is much used in medical practice, as a tonic and stimulant, and I think I have seen a good effect from it in horses; in weakness of stomach, diminished appetite, and imperfect digestion; in such cases I have given it with about two drachms of aloes and a little soap; a little ginger also has been occasionally added: it is often joined with preparations of steel or iron.

There is a *simple* and a *compound* tincture of myrrh sold by druggists: the former is not used in veter-

inary practice, but the latter is a favourite remedy with grooms and farriers, for recent wounds.

The dose of myrrh is from two to four drachms.

NARCOTICS. Medicines that stupify and procure sleep; such as opium, &c.

NATRON. (See *Soda.*)

NIGHTSHADE. (See *Deadly Nightshade.*)

NITRE, *Saltpetre*, or *Nitrated Kali*, or *Potash.* A neutral salt, formed by the combination of nitrous acid and potash, or kali. This is a medicine of great utility in veterinary practice, and highly esteemed both by farriers and veterinarians. It possesses a cooling and diuretic property, which renders it extremely useful in fevers, and all inflammatory complaints; joined with comphor it is an excellent remedy for suppression of urine or stranguary, provided it does not arise from inflammation of the kidneys.

In fevers, it is often joined with emetic tartar, or antimonial powder, with good effect. In catarrh or cold, nitre is the best remedy, and in troublesome coughs, it often gives relief, if mixed with some emollient drink and a little honey.

The medium dose of nitre is about one ounce, though farriers often give double that quantity, or more; but in such large doses it is apt to irritate the stomach and do mischief; therefore, in urgent cases, one ounce may be given every fourth hour, in which way there will be no danger of its producing that effect, particularly if it be given in a mucilaginous drink, or in water gruel. If nitre be given in the form of a ball, it is advisable to offer some water immediately before or after, or to wash it down with a hornful of water-gruel.

Nitre, as we have already observed, acts as a diuretic; but this effect is remarkably expedited by the addition of camphor, about two drachms of the latter to one ounce of nitre.

NITROUS ACID. A strong liquid caustic, which,

when diluted with a large proportion of water, forms a good detergent wash

Quicksilver is readily dissolved in this acid, and forms with it an excellent caustic, which is an infallible remedy for the *foot-rot* in sheep. This solution may be mixed with melted lard, so as to form a strong detergent ointment, or with water in any proportion. (See *Acid Nitrous.*)

NUTMEG. This well-known spice is a good stimulant and cordial medicine, but not preferable to many others that are much less expensive.

OAK BARK. A decoction of oak bark is a good vehicle for tonic and astringent medicines. When finely powdered and made into balls with ginger and a little oil of caraway, it may be of service in those complaints, the continuance of which depend upon debility. It is said, however, to be much less efficacious than *Peruvian bark*, yet, when that cannot be procured, it may be found a useful substitute. The dose is about two ounces.

OILS. Oils are either *fixed* or *volatile.* The former are procured from various animal and vegetable substances, generally by means of pressure, from which circumstance they have been named also *expressed oils;* and are termed fixed, because they do not evaporate, except at a very high temperature, when they are decomposed. *Volatile oils*, on the contrary, evaporate very readily, and are generally obtained from vegetables by distillation; and as they commonly contain all the essential qualities of the substance they are procured from, they have been named also *essential oils.*

The numerous officinal oils directed in the old dispensatories, are still highly esteemed by farriers, among which are oil of swallows, earthworms, johnswort, spike, petre, &c. and we frequently meet with receipts for "strain or bruise oils," in which more than a dozen different kinds of oils are ordered. Perhaps it may be an acceptable piece of information to those who place any confidence in these oils, that only

three kinds are kept in the shops, from which this great variety is furnished; which are oil of elder, oil of turpentine, and Barbadoes tar. Oil of spike is made by colouring oil of turpentine with alkanet root: oil of petre, by dissolving Barbadoes tar in the same oil: for all the other kinds oil of elder is sold; and this is often made by colouring common oil with verdigris.

Oil of Elder. (See *Elder.*)

Oil of Bay. This is more like ointment than an oil, of a light green colour, and smells like bay berries, from which it is procured. It is used chiefly as an external application in cutaneous complaints, such as the mange. Oil of bay is sometimes substituted for hog's lard in making mercurial ointment, and is supposed to render it more active. When to this mixture is added cantharides, and oil of origanum, a strong blister is formed, which is warmly recommended for the removal of splents and spavins.

Oil of Castor. A useful laxative.

The dose is about a pint. (See *Castor Oil.*)

Oil of Almonds. A very sweet and pure oil, obtained either from sweet or bitter almonds, by expression.

It is used in coughs, and as a laxative for children, in medical practice, but is never required for veterinary purposes, olive oil being equally efficacious, and similar in its medical properties.

Oil of Olive. This also is a very pure and sweet oil; and in the dose of a pint generally operates as a laxative. When castor oil cannot be easily procured, this may with great propriety be substituted for it.

Oil of Linseed. This also has a laxative quality, but is not so certain in its effect as the castor or olive oil. It is employed as a remedy for coughs, and on such occasions the *cold drawn oil* is preferred; *i. e.* that which is expressed from the seed without the assistance of heat. Farriers, ever averse to the use of simple medicines, invented the following

absurd receipt for an epidemic cough, which prevailed a few years ago:—"Cold drawn linseed oil four ounces, Barbadoes tar four ounces, balsam of sulphur four ounces, honey four ounces, liquorice powder six ounces, elecampane powder three ounces." When we reflect that all the medicines used by farriers consist, like the above, of a great number of heterogeneous substances, it will not appear astonishing that the veterinary art made so little progress while in their hands.

OIL OF PALM, or *Palm Oil.* This, though termed an oil, is of the consistence of hog's lard, and very similar to it in its medical qualities. It is of a yellow colour, and has rather an agreeable smell.

OLIBANUM. A gummy resinous substance, sometimes used in medicine as a stimulating expectorant, but scarcely known in veterinary practice.

ONIONS. These possess a diuretic power in the horse, but are seldom used. In suppression of urine, a peeled onion is sometimes placed within the sheath, or prepuce of a horse, or vagina of a mare, with a view to excite *staling.* It is said to succeed now and then, but in difficult cases it is certainly an inadequate remedy, and when the bladder is inflamed may do much injury.

OPIATE CONFECTION is composed of opium, long pepper, and other stimulants. One ounce of the confection does not contain more than fourteen or fifteen grains of opium; it may, therefore, be given in doses from one to two ounces, though in this quantity it would be a powerful stimulant.

OPIUM. One of the most important articles of the Materia Medica.

It is classed among the narcotic sedatives, of which it is undoubtedly the most useful.

The anodyne quality which renders *opium* so valuable in human medicine, is not so manifest when given to the horse; this I attribute to the great difference there is between the diseases of men and horses.

If injudiciously given, *opium* frequently aggravates the disease, and does much injury; and I have several times seen it increase pain, when it has been improperly given as an anodyne. In spasmodic complaints of the bowels it is an excellent remedy, particularly if joined with aromatic powder, ginger, or some other stimulant. In diarrhœa it is an effectual remedy, but must be given cautiously. In diabetes I have found it very beneficial, when joined with bark and ginger. Sometimes it is given with emetic tartar, and some cordial composition, with good effect, and in this way it proves a good diaphoretic.

I have often given opium and squill, in obstinate coughs with success; but the effect is not always permanent.

Opium is very apt to produce costiveness in horses, but this tendency may be in a great measure counteracted by exercise; when it does take place, it may be removed by glysters, bran mashes, or a laxative ball.

The medium dose of *opium* is one drachm, but if given in the form of a glyster, which it sometimes is with the best effect, two drachms will not be too much.

In human medicine, *opium* is frequently used in the form of a tincture; in veterinary practice it is most convenient in a solid form. Should a liquid form be at any time necessary, a watery solution (using the sediment as well as the clear part) is preferable to the tincture.

OPOPONAX. A gum resin, nearly resembling *galbanum* in its medical qualities, though so much inferior that it does not merit any notice as a veterinary medicine.

OPODELDOC is made by dissolving soap and camphor in spirit of rosemary. It is either liquid or solid according to the proportion of soap. In the solid state, it seems to be the same as the celebrated *Steers's Opodeldoc.*

It is a popular remedy for strains and bruises, and is a very proper application when the inflammation, which always accompanies those complaints at first, has subsided, or has been removed by other remedies.

ORIGANUM. The essential oil of this plant is much used by farriers, as an ingredient in their strain oils, or mixtures for bruises. It is a very powerful stimulant, and capable of doing much good in those complaints: it is sometimes mixed with mercurial ointment, oil of bay, and cantharides, to form strong *blisters.*

ORPIMENT. (See *Arsenic, yellow.*)

OYSTER SHELL, when burnt and levigated, is employed as an *absorbent.*

The dose is about one ounce.

OXYGEN. A constituent part of atmospheric air, without which it would be unfit for respiration. In breathing, we deprive the air of this pure and vital principle; it is therefore unfit for the purpose a second time; and if an animal be confined in air that has been once respired, life is almost instantly extinguished. Hence may be inferred the necessity of ventilating stables: for although in close stables the air is not wholly deprived of this principle, yet its proportion is considerably diminished: and it is well known, that when there is a deficiency of this animating principle, the system is debilitated, and all its functions imperfectly performed; whence arise cough, broken-wind, diseased eyes, &c. &c. Perhaps future observation may enable us to add glanders to the list of diseases caused by foul air.

OXYD. The calxes of metals are now termed *oxyds* on account of their containing a certain proportion of oxygen (the acidifying principle); but not sufficient to give them the properties of an acid. The term *oxyd* signifying an imperfect acid. But this subject more properly belongs to a chemical work.

PALM OIL. (See *Oil of Palm.*)

PELLITORY OF SPAIN, the root. This is used

chiefly to remove the tooth-ache, and pain aoout the jaws; which it does by causing a copious discharge of saliva, when kept in the mouth a short time. It is not necessary in veterinary practice.

PECTORALS. Medicines that relieve cough, and disorders of the lungs.

PENNYROYAL. The essential oil of this herb possesses a carminative power, but is very inferior to that of *peppermint.*

PEPPER, BLACK. This is often used by farriers in the cholic, but is by no means an eligible remedy and is often given very improperly. I once saw a farrier give two ounces, in half a pint of Daffy's Elixir, to a horse, that was said to be attacked with gripes, and he condescended to give me the following *scientific* explanation of the manner in which it was to act. "*The pepper is to break the wind, and the Daffy's Elixir is to drive it out.*" I remonstrated, and endeavoured to rescue the poor animal, who suffered from *inflammation* of the bowels, but to no purpose; the poisonous drench was given, and in the evening the horse died. I mention this circumstance as a caution to those who are too fond of giving those very hot remedies in pains of the bowels, without inquiring into the nature of the complaint. There are cases, no doubt, in which *pepper* may be given with advantage, particularly in flatulent complaints; but these must be carefully distinguished from such as are inflammatory, for in these, *pepper* is absolutely poisonous.

The dose of *black pepper* is from half an ounce to an ounce.

PEPPER, CAYENNE. (See *Cayenne Pepper.*)

PEPPER, LONG. Is rather stronger than black pepper.

PEPPER, JAMAICA. (See *Jamaica Pepper*, of *Allspice.*)

PEPPERMINT. (See *Mint.*)

PHOSPHORUS. A very combustible substance made either from bones or urine. Many experiments

have been tried, in order to ascertain its medical qualities; and it appears to be a very dangerous medicine, inflaming the stomach in small doses.

PINK ROOT. (See *Indian Pink.*)

PITCH. A black and impure resinous substance, used by farriers in making *charges.* (See *Burgundy Pitch.*)

POMEGRANATE. The dried fruit is a moderately strong astringent, and is sometimes employed in diarrhœa, particularly in horned cattle.

The dose is from half an ounce to an ounce.

It may be joined with alum, ginger, and other auxiliaries, and occasionally with opium.

POPPY. The heads of *poppy* dried make a good fomentation for wounds and tumours that are in a painful and irritable state; for which purpose they are to be broken in pieces, and boiled in water, so as to make a strong *decoction.* This decoction proves very serviceable in irritability of the bladder, if used as a glyster, the bowels having been previously emptied; for this purpose the decoction should be made stronger, by boiling it for some time.

It seems very probable that the good effect of this decoction depends in a great measure upon the opium which is extracted from the poppy heads; it may be better, therefore, to dissolve in water-gruel a *proper dose* of opium, when an anodyne glyster is required, as we cannot be accurate in respect to quantity when the decoction of *poppies* is employed.

POTASH, *Carbonate of, Prepared Kali,* or the *Vegetable Alkali.* The potash of commerce is in a very impure state, and not applicable to chemical or medical purposes. When properly purified, it is joined with *purgatives* and *tonics* with advantage. In those cases which require the use of *tonics,* there is generally an acidity in the stomach, which potash corrects; and it renders purgative medicines more easy of solution. Given alone it generally acts as a diuretic. When neutralized with acids, it has a laxative property, but requires to be given in large

doses. With vitriolic acid it forms vitriolated tartar, or sal polychrest (*vitriolated kali*); with nitrous acid, that very useful medicine termed nitre (*nitrated kali*), which, contrary to what we have just observed, is a diuretic in a moderate dose (See *Nitre*); and with vinegar, or acetous acid, it makes soluble tartar (*tartarized kali*). The purified potash is named in the shops *prepared kali*; but formerly salt of tartar, or wormwood. When potash is deprived of the carbonic acid with which it is naturally combined it becomes a strong caustic; and when diluted is sometimes employed as a wash for the mange. In this state it is termed *pure kali*, and is seldom used internally. (See *Alkalies.*)

PRECIPITATE, RED, or *Red Nitrated Quicksilver.* This is extremely useful as a mild caustic or detergent and has an excellent effect in foul ulcers. It may be used either alone, being finely powdered and sprinkled on the affected part, or mixed with various ointments. (See *Detergents.*) It is made from quicksilver and nitrous acid, but is considerably weaker than a solution of that metal in nitrous acid. It becomes, however, a strong and very efficacious caustic when dissolved in nitrous acid; in which state, by proper management, it readily cures fistula, poll-evil, and canker. This solution may also be mixed with unctuous substances, forming with them good detergent ointments; or it may be diluted with water so as to form a detergent lotion of considerable efficacy.

PREPARED KALI. (See *Potash.*)

PUFFBALL. The dust of puff-ball is sometimes used to stop bleeding; but nothing of this sort should be depended upon when the bleeding is considerable, *pressure* being much more effectual.

QUASSIA. A powerful bitter, and a good medicine in cases of weakness of the stomach. It is generally given in powder in doses from two to three drachms, joined with ginger, or some other stimulant, and a small quantity of soda or potash.

QUICKLIME. (See *Lime.*)

QUICKSILVER, or *Mercury.* The most useful of all the metals for medical purposes. In its metallic state it is inert, but when combined with *oxygen*, or any of the acids, it becomes extremely active; and though one of the most valuable articles of the Materia Medica, requires considerable skill and experience to be employed with advantage. The most simple preparations of quicksilver are, mercurial ointment, Æthiop's mineral, and cinnabar. These may be employed with little danger: they seem, indeed, to be of very little use as horse medicines, except the ointment, which is a good external application; and in human medicine a very valuable preparation. The more active mercurials are, sublimate (muriated quicksilver), red precipitate (red nitrated quicksilver), turpeth mineral (vitriolated quicksilver), and calomel, each of which is described in its proper place.

QUICKSILVER OXYDATED, or *Calcined Mercury.* A reddish powder, into which quicksilver is converted by being kept in a certain degree of heat a sufficient length of time, and in a vessel adapted to the purpose. It is an active mercurial, but rarely employed in veterinary practice.

The dose is from half a drachm to a drachm.

RATTLESNAKE ROOT. This is now neglected by medical practitioners, and inapplicable to veterinary purposes

RAKING. A term employed by farriers for an operation which consists in introducing the hand in the horse's *rectum*, and drawing out any hardened excrement that may be lodged there. This may generally be effected more to the purpose, and with greater ease to the animal, by means of glysters.

REALGAR. A natural combination of sulphur and arsenic, not used as a medicine. (See *Arsenic.*)

RECTIFIED SPIRIT. *Alkohol*, or *Spirit of Wine.* This is obtained in a dilute state, from fermented liquors by distillation; and is afterwards rectified

or concentrated, by repeating the operation two or three times. Rectified spirit is the basis of many useful embrocations, for strains, bruises, &c. It dissolves camphor, and all the resins very readily; hence we have camphorated spirit, opodeldoc, Fryar's balsam, &c. Mixed with an equal quantity of water it forms what is termed proof spirit, which is the liquid generally employed for making tinctures. *Rectified Spirit* is often used alone as an embrocation for strains; and, when the injury is deeply seated, is very serviceable. I think, however, it is rendered more efficacious by the addition of camphor, or oil of rosemary. Rectified spirit is never employed as an internal remedy in the horse; though fermented liquors, such as beer, porter, or wine, have been often given with great advantage, in cases which required cordials. I have often seen horses, that have been so fatigued with a long chase or journey, as to refuse their food and appear quite exhausted, wonderfully refreshed by taking a cordial ball in a pint or more of beer, and feed soon after with great alacrity; the advantage thus derived is not merely temporary, as they are by this treatment rendered adequate to another chase or journey much quicker than they would otherwise be. I have known wine given in obstinate diarrhœa with good effect.

It may be asked, why diluted alkohol, or rectified spirit, is not equally useful, since it is the essential principle of all fermented liquors. The reason is this: when rectified spirit is diluted with water to any degree, the combination is so weak, that the heat of the stomach readily separates the former, which, from its volatility, attaches itself to all the superior parts of the stomach, acting on them as rectified spirit; whereas in fermented liquors, the spirit and water are so firmly united, that the heat of the stomach is not sufficient to separate them. This may be proved by experiments out of the body and sufficiently accounts for the difference we observe between the action of diluted spirit, and for-

mented liquors in the human stomach: but in the horse great part of this organ is covered by an insensible membrane; and as spirit has never been fairly tried on this animal, it is worth while to make some experiments on the subject.

I once gave six ounces of bandy, diluted, with the best effect to a horse that was once done up on a journey; it enabled him to continue it, without any apparent inconvenience.

REGULUS OF ANTIMONY. Common or crude antimony, deprived of its sulphur, and brought to a metallic state. It is never used as a horse medicine. In the human body it is said to operate with great violence.

REPELLENTS. A term employed by the old school, for medicines that were supposed to have the power of causing tumours or eruptions to recede from the surface of the body. The term is founded upon a false theory, and has been the cause of much mischief in practice.

To be convinced of this, the reader may consult modern works on physiology.

RESINS are distinguished by their inflammability, and by combining readily with rectified spirit and oils. They are generally solid, and immixable with water.

RESOLVENTS. Medicines that disperse tumours, either external or internal.

ROBORANTS. Medicines that strengthen the system.

ROSIN, yellow and black. The former is a weak diuretic, and sometimes given with advantage to horses that are subject to swelling of the legs. The dose is about one ounce, which may be powdered and mixed with the corn: it is necessary to continue this medicine for several days, or until its diuretic effect is considerable. Black rosin is not used in medicine.

ROWELLING. An operation often performed in veterinary practice. It consists in making an

incision in the skin, about an inch in length, with a pair of short and strong-bladed scissars. The finger is then introduced in order to separate the skin from the subjacent parts all round the incision, that the cavity may contain a circular piece of leather about an inch and a half or two inches in breadth: before this leather is introduced, a hole is made in the centre about half an inch in diameter; it is then covered with tow (the hole being left open), and smeared with digestive ointment: when the rowel is put in, the hole in the middle of the leather is plugged up with a little tow.

In this situation it is left until matter forms, which generally happens in two or three days; the plug of tow is then withdrawn, and the matter suffered to flow out, in which state it remains as long as is thought necessary. Thus we see that a rowel is an artificial abscess, the leather first causing *inflammation*, which ends in *suppuration* or the formation of matter; and the matter continues to be formed as long as the extraneous body or leather remains under the skin.

The intention of rowelling is to divert inflammation from any important organ or part of the body Thus, when the lungs are inflamed, the animal certainly dies, unless it is put a stop to; but the skin may be inflamed to a considerable extent without danger; we therefore put a *rowel* in the chest, which, though not sufficient of itself to stop the inflammation of the lungs, contributes very materially to it, and with the other necessary remedies often effects a cure. In large swellings of the hind legs and obstinate cases of grease, *rowels* in the thighs are good remedies.

In shoulder strains, a *rowel* may be put in the chest with good effect. In short, whenever inflammation attacks an essential and important part of the system, much benefit will be derived from inserting a *rowel* in some contiguous part that is of little importance. When a *rowel* is removed, the part generally

heals of itself; if not, a little Fryar's balsam may be applied.

ROSEMARY. The essential oil of rosemary forms an excellent embrocation for strains and bruises, if mixed with rectified spirit and soap. This mixture is nearly the same as the celebrated *opodeldoc*; and by the addition of camphor becomes the same thing. Oil of rosemary has been given in the flatulent cholic or gripes with good effect, but requires considerable dilution.

The dose is from half a drachm to one drachm, or more.

RUE. This plant has been recommended as an anthelmintic; but whatever its virtues may be in the human body, it has certainly no effect of this kind on the horse; and may with great propriety be dismissed from our Materia Medica. Farriers sometimes use it in making fomentations.

SACCHARUM SATURNI. (See *Sugar of Lead.*)

SAFFRON was formerly thought a good cordial medicine, and frequently employed as such; but at this time medical practitioners are agreed in thinking it destitute of any medical virtues. It is still retained, however in their Pharmacopœia, probably on account of its elegant yellow colour and fragrant smell. As a horse medicine it is certainly not worth notice.

SAGAPENUM. A gum resin, similar to, but weaker than, assafœtida.

SAGE. A plant not used in veterinary practice.

SAGO. A farinaceous substance, which, when boiled in water, is a proper drink for sick horses that are incapable of feeding.

ST. JOHNS-WORT. A plant not used in medicine, though formerly supposed to possess many virtues. The oil of St. Johns-wort sold by druggists, is nothing more than common green oil, which is sold under a variety of names. (See *Oils.*)

SAL AMMONIAC, or *Muriate of Ammonia.* A neutral salt, which when dissolved in vinegar and

water, forms a good embrocation for strains and bruises.

SAL INDUS. A saline substance of a reddish colour and very unpleasant smell, lately brought from the East Indies, and strongly recommended as a remedy for that species of worm called *botts*. I have not found it, however, capable of destroying those worms, or expelling them; though, if given in large doses, it will sometimes discharge common worms, particularly if assisted by aloes. The dose is from two to four ounces. It appears to differ from common salt only in being combined with a small proportion of liver of sulphur, or sulphurated potash.

SAL VOLATILE. This term is promiscuously applied to compound spirit of ammonia, and prepared ammonia or smelling salts; but the former is often distinguished by the name "*spirit of sal volatile.*"

SALTS. There are three kinds of salt, viz. the acid, the alkaline, and that which is formed by the combination of these, i. e. the neutral. (See *Acids, Alkalies, and Neutrals.*)

Salt Common, or *Sea Salt.* This is the most useful of all neutral salts for veterinary purposes, nitre excepted.

In doses from four to six ounces it generally operates as an easy and effectual laxative; and when there are worms, if assisted by a small dose of aloes, it frequently expels them.

It is extremely useful in laxative glysters, and considerably promotes the operation of castor oil. In chronic inflammation of the eye, I have often applied it to that organ in fine powder, with the best effect.

Salt Petre. (See *Nitre.*)

Salt of Steel, or *Vitriolated Iron.* A combination of vitriolic acid and iron. This is by no means so remarkable for its *tonic* power in the *horse* as in the human subject, but is said to possess this quality, and is often given in doses from four to six drachms.

I have several times employed it in cases that appeared to require tonic remedies, but with very little effect. (See *Iron.*)

SALT OF TARTAR. (See *Potash and Alkalies.*)

SALT OF WORMWOOD. (See the same.)

SARSAPARILLA. A root not used in veterinary medicine.

SASSAFRAS. The only part of sassafras that can be of use in veterinary practice, is the essential oil, which is an aromatic stimulant of considerable power.

SAVIN. Farriers often employ the leaves of this shrub in a green state as an anthelmintic, but I have never seen it do any good.

SCAMMONY. A gum resin, strongly purgative, but never necessary in veterinary practice when aloes can be procured.

SCORDIUM. The leaves of scordium were formerly considered as an astringent and corroborant; and there is still an electuary of scordium or diascordium kept by druggists for the accommodation of farriers, who are often attached to useless medicines.

SEA-WATER. Some horses will drink a sufficient quantity of sea-water to excite purgation. Should such horses be affected with swollen heels, inflamed eyes, or other inflammatory complaints, it would be found a useful remedy.

SENNA. The leaves are an effectual purgative in the human body; but in the horse it is an inconvenient medicine, on account of the large quantity requisite to produce this effect. Some writers on farriery have recommended a strong infusion of senna, with Glauber's salt, as an expeditious laxative.

SIALOGOGUES. Medicines that cause an increased secretion of saliva, the principal of which are the preparations of mercury.

SILVER. The only preparation this metal affords is the lunar caustic or nitrated silver, an application of great importance in surgery, whether human or veterinary. (See *Caustics.*)

SNAKE ROOT. The idea that this root counteracts the bites of serpents is now disregarded; but it is considered a useful medicine in cases of weakness, and may be employed with advantage in veterinary practice, particularly in ill-conditioned wounds, in which there appears a tendency to mortification.

The dose is from half an ounce to an ounce, and is generally given with prepared ammoniac. or salt of hartshorn, camphor and bark; in some cases opium is added.

SOAP. The various kinds of soap have all a strong diuretic quality; but the purer kinds only should be employed as internal remedies, and these are Castile, Spanish, and pure white soap. Soap is a useful ingredient in purgative, as well as diuretic preparations.

The dose is from two drachms to half an ounce, but it is sometimes given in larger doses.

Soft soap is very useful in cleansing foul heels; and when mixed with oil of turpentine and spirit of wine, forms a good embrocation for strains, bruises, and indurated tumours.

SODA. *Natron*, or the *Mineral Alkali*. This is procured chiefly from the ashes of marine plants. Its medical properties are nearly the same as potash, but the prepared natron or soda is sometimes preferred as an ingredient in purgative and tonic medicines. The dose is from two to four drachms.

SOUTHERNWOOD. A fragrant shrub, directed by the London College as an ingredient in fomentations.

SPANISH FLIES. (See *Cantharides.*)

SPEARMINT. (See *Mint.*)

SPERMACETI. An unctuous substance, procured from the head of a certain species of whale. In medical practice it is often employed as a demulcent to allay irritation, as in cough, but is rarely employed in veterinary practice, and appears to differ very little in its medical properties from hog's lard or suet. It has been lately discovered that the muscular parts

of all animals may be converted into a substance resembling spermaceti, by maceration in water.

SPIKE, a speices of lavender. An oil of spike is kept in the shops and much used by farriers; it appears, however, to be nothing more than oil of turpentine, coloured with alkanet root.

SPIRITS. (See *Rectified Spirit.*)

By the term spirit is commonly understood *alkohol*, either pure or diluted, and mixed with various substances. Spirit may be obtained from fermented liquids in a diluted state; when concentrated and purified, it is termed rectified spirit, or alkohol. An equal quantity of water being mixed with alkohol, forms proof spirit. There are various kinds of spirits used in medicine, such as spirit of nutmeg, spirit of juniper, &c. which are made by distilling the medical substance with dilute spirit.

SPONGE. Burnt sponge is sometimes used by medical practitioners in scrophulous complaints, but it is never employed in veterinary practice.

SQUILL, or *Sea Onion.* A large bulbous root resembling the onion, and a medicine of considerable value. The best preparation of squill for veterinary purposes is the powder of the dried root; which, in the dose of one drachm, or more, is an excellent expectorant, and very efficacious in chronic cough, in larger doses it generally acts as a diuretic, but is not a desirable medicine for that purpose, there being many diuretics more certain in their effect. *Gum Ammoniacum* is an eligible addition to squill; and I have sometimes seen camphor and opium joined to it with good effect. One drachm of the dried squill is equal to about five drachms in its fresh state. There are three other preparations of squill made, viz. the spiritous and acetous tincture, and the oxymel; but these are not well calculated for veterinary purposes.

STARCH. Starch glysters with opium are sometimes employed in obstinate diarrhœas or irritation of the rectum. In no other way is it useful in vet-

erinary practice, while the cheaper mucilages, such as linseed, marshmallow, &c. can be procured; but when these are wanting, it is capable of making a good mucilaginous drink.

STAVESACRE. The seeds of Stavesacre are recommended as a topical application in cutaneous complaints, and for destroying those animalcules which are sometimes generated upon the horse's skin. They are used either in the form of a decoction, or finely powdered and mixed with train oil, turpentine, &c.

STEEL. The medical properties of steel are not supposed to differ from those of iron. (See *Iron.*)

STORAX. The common and strained storax are the only kinds kept in the shops. The former is in the form of saw-dust, intermixed with resinous matter of an agreeable odour: the latter is extracted from this dust, and is far more pure; indeed it is the only kind that can be employed for medical purposes. In its medical properties it nearly resembles balsam of tolu, and may be given in obstinate coughs with squill, opium, and soap.

The dose is about two drachms.

STYPTICS are medicines which constringe the blood-vessels when wounded, so as to stop an effusion of blood. Many preparations have been recommended for this purpose: but when the size of the wounded vessel is at all considerable, an adequate degree of pressure by means of bolsters and bandages is alone to be depended upon; and when that cannot be done, the vessel must be tied up above the wound and below, by which the bleeding will be effectually suppressed. No danger is to be apprehended from slight bleedings in the horse, as they always cease spontaneously.

The styptics commonly employed are oil of turpentine, diluted vitriolic acid, muriate of iron, absorbent earths and flour.

SUBLIMATE. *Corrosive Sublimate of Mercury, or Muriate of Quicksilver* For veterinary purposes this

Tar, mixed with oil of turpentine, and cantharides, forms a strong blister. Farriers sometimes employ *tar* as a remedy for cough, but it more frequently aggravates than relieves the complaint. (See, also, *Barbadoes Tar.*)

TARTAR. An acid substance, found about the sides and bottoms of casks in which wine is fermented; when purified, it is termed chrystals, or cream of tartar. Farriers generally employ it in their purging medicines, upon the authority of some old writers, who supposed it to have the property of correcting aloes, but in the horse it is a very inert medicine, and, in my opinion, of very little use.

TARTAR EMETIC. (See *Emetic Tartar.*)

TARTARIZED ANTIMONY. (See *Emetic Tartar.*)

TARTAR SOLUBLE, or *Tartarized Kali.* A neutral salt, not used in veterinary medicine.

TARTAR, VITRIOLATED. A neutral salt, not adapted to veterinary purposes.

TIN. This metal is a good anthelmintic in dogs, and though not employed in veterinary practice, appears to be worth a trial. I have seen great numbers of worms discharged from dogs, by giving filings or scrapings of pewter, which is composed principally of tin and lead.

TOBACCO. This is sometimes given to horses by grooms, for the purpose of keeping their legs fine; it seems to be an innocent medicine, and generally acts as a diuretic.

TORMENTIL. The root is a powerful astringent, and is sometimes employed in the diarrhœas of horses and horned cattle, with good effect.

One ounce, or one ounce and a half, being boiled in three pints of water, to one pint and a half, with a little cassia, and caraway seeds, makes one dose, which may be repeated if necessary.

TRAGACANTH, or *Gum Dragon.* This gum makes a strong mucilage, and may be employed in making emollient drinks.

TURBITH MINERAL, *Yellow Mercurial Emetic*, or

Vitriolated Quicksilver. This mercurial preparation is seldom used in veterinary practice, being apt to irritate the stomach and bowels, and bring on violent purging; but it has been recommended as a remedy for farcy.

The dose is from half a drachm to a drachm.

It is a good emetic for dogs, when they have swallowed any poisonous substance, or at the commencement of *the distemper.*

TURMERICK. This root, though formerly employed, and still highly esteemed, by farriers, as a remedy for the jaundice, or yellows, does not appear to differ from other aromatic stimulants, which quality it possesses in a moderate degree.

The dose is about one ounce.

TURNIPS. Boiled *turnips* make an excellent poultice for the heels when affected with grease.

TURPENTINE. This term is applied to the resinous juices of certain trees. There are four kinds, viz. Chio, Strasburgh, Venice, and common *turpentine,* the two last only are employed in veterinary medicine. They are effectual diuretics, and possess a considerable carminative power. Common *turpentine* is a principal ingredient in digestive and detergent ointments. By distillation we obtain from it the oil, or as it is sometimes termed, the spirit, of turpentine, a medicine of great utility. In doses from one ounce to two ounces, it frequently cures the flatulent cholic, or gripes, and when combined with camphor, and other stimulants, makes a good embrocation for indurated swellings, strains, and bruises. When properly mixed with mustard, it forms an embrocation, that has been found serviceable in counteracting *internal* inflammation. I have seen it applied to obstinate ulcers with good effect. It is a useful ingredient in blistering ointment, and liniments.

Venice Turpentine is generally made by mixing the oil with the common *turpentine,* which is easily done when the latter is melted.

Venice Turpentine is sometimes employed as an ingredient in cough medicines. The dose is about half an ounce. But if given as a remedy for flatulent cholic, or as a diuretic, a larger quantity is necessary. It makes an excellent detergent ointment, if mixed with about a fourth or a third part of red precipitate, finely powdered.

TUTTY. A grey earthy substance, not used in veterinary practice.

VALERIAN. The dried root is employed by medical practitioners, in spasmodic and nervous complaints, but there is no disease in the horse in which it is likely to be serviceable.

VERDIGRIS. The rust of copper. It is made in wine countries, by burying thin copper-plates in the refuse parts of the grape, after the juice has been pressed out. It is employed externally as a mild caustic, or detergent, and is frequently mixed with common turpentine, or ointments, for the same purpose.

When *verdigris* is dissolved in distilled vinegar, and chrystallized, it becomes considerably stronger, and will be found an excellent remedy for *quittors*. In this state it is called chrystallised or distilled *verdigris*. Common *verdigris* has been recommended as a remedy for the farcy; but I have never seen it do any good in that complaint, though I have several times given it a trial.

It has been fairly tried in the glanders: half an ounce was given daily for a considerable time, but it had no effect on the disease, nor did it occasion any inconvenience to the animal. This is rather remarkable, *verdigris* being considered as a poison in the human body, and is the substance which causes the deleterious effects which copper vessels, when employed for culinary purposes, have sometimes occasioned.

VERMILION. This is prepared nearly in the same way as *cinnabar* but as a little arsenic is some-

times employed to heighten its colour, it is never used for medical purposes.

VESICATORIES. A term synonimous with blisters.

VINEGAR. Though medical practitioners prefer *distilled vinegar*, yet, for veterinary purposes, the best *undistilled vinegar* is just as proper. It makes a useful embrocation with about a tenth part of *sal ammoniac*, or muriate of ammonia, for inflamed swellings; and when neutralised with prepared ammonia, or salt of hartshorn, forms a preparation sometimes employed in fevers, and termed Minderus's spirit.

Vinegar is sometimes used alone as an embrocation for strains, bruises, or inflamed swellings of any kind, and often with success; it may be made more effectual, however, by the addition of sal ammoniac and proof spirit, or by being mixed with a small quantity of sugar of lead and water, according to the circumstances of the case. A solution of honey in *vinegar* is termed an oxymel, and is sometimes used as a remedy for coughs; this is said to be nearly the same preparation as Godbold's vegetable syrup, which has been sometimes recommended by farriers, to cure "*broken wind*," an incurable disease!

VIPERS' FAT is similar in its medical qualities to common fat; though formerly supposed to be a remedy for the bite of the viper, and other venemous reptiles.

VITRIOL, a term commonly applied to those salts of which vitriolic acid is a constituent part; the London college, however, gives names expressive of their composition, thus, *white vitriol*, which is composed of vitriolic acid and zinc, is named *vitriolated zinc*.

VITRIOLIC ACID. (See *Acid Vitriolic.*)

VITRIOLATED COPPER. (See *Blue Vitriol.*)

VITRIOLATED IRON, *Green Vitriol*, or *Copperas*. This resembles salt of steel, in its medical qualities. (See *Salt of Steel.*)

VITRIOLATED KALI, or *Vitriolated Tartar*, not used in veterinary medicine.

VITRIOLATED NATRON, or *Soda*. (See *Glauber's Salt.*)

VITRIOLATED QUICKSILVER. (See *Turbeth Minereal.*)

VITRIOLATED ZINC, *White Vitriol*, or *Copperas*. This has been recommended as a tonic remedy, in doses from half an ounce to six drachms. But have seen it given to the extent of twelve ounces at one dose, to a glandered horse, by way of experiment, without producing much inconvenience: the only effect produced, was upon the urinary organs, occasioning a frequency and a little difficulty in *staang*. It is a good application to indolent ulcers and in the latter stages of grease.

WAX. Bees *wax* is used only in the composition of ointments and plasters.

WINE. *Port wine* has been strongly recommended in obstinate diarrhœas, accompanied with debility. A little cassia, or ginger, is generally added to it, and on some occasions, *opium*. It is certainly a powerful cordial, and may be advantageously employed when such remedies are required. It has been given in the diarrhœa of horned cattle with good effect. The dose is about half a pint; but a horse accustomed to cordials will take more.

WINTER'S BARK. A pleasant stimulant; and though not commonly used in veterinary practice, may be given with good effect in cases of indigestion, and weakness of stomach.

The dose, one ounce every morning.

WOLF'S BANE, or *Aconite*. A dangerous medicine in the horse, and never employed, its effect having been ascertained upon glandered horses.

WORM SEED. Not used in veterinary medicine.

WORMWOOD, a strong aromatic bitter, but rarely employed as an internal remedy. It is a principal ingredient in fomentations. Its essential oil is very

strong, and is sometimes added to worm-balls, but it does not appear to possess any peculiar qualities.

WORT. An infusion of malt, and a very useful drink in the decline of fevers, being nutritious and easy of digestion.

ZEDOARY. The root is a pleasant aromatic stimulant, not unlike turmeric, but stronger. It has been recommended in jaundice, or yellows, but can be serviceable only by counteracting the debilitating effects of that disorder.

ZINC. This metal affords only two medicinal preparations, viz. vitriolated zinc and flowers of zinc. The former we have already noticed; the other is scarcely ever employed in veterinary practice, but may be serviceable as an application to ulcers, to promote their healing, or cicatrization, as it is termed.

THE VETERINARY

PHARMACOPŒIA:

OR,

INSTRUCTIONS FOR COMPOUNDING HORSE MEDICINES, AND PREPARING THE VARIOUS SUBSTANCES EMPLOYED IN VETERINARY PRACTICE, IN THE MOST CONVENIENT AND EFFICACIOUS MANNER.

With a large collection of valuable receipts, of established efficacy

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ABLUENTS. Medicines that were supposed to purify the blood, by carrying off any noxious matter that may be mixed with it.

It has been proved that noxious matter does sometimes exist in the blood,* but we do not know any medicine that has the power of *washing it away*, or expelling it, as the term *abluent* implies. The *glanders* of horses seems to arise from the introduction of a peculiar poison into the mass of blood, like the venereal disease, but the effect of this poison is produced upon the *solids*; the blood serving merely as a vehicle for it. It is generally known that mercury is a remedy for the venereal disease, but it does not appear to produce its beneficial effects, by *expelling* the venereal poison from the system, or by *uniting with it*, and changing its poisonous quality; it is more probable that it renders the *solids* unsusceptible of the venereal action, and that by continuing the use of it a sufficient length of time, the poison will

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* The blood of a *glandered* horse was transfused into the jugular vein of a healthy ass, by Mr. Coleman; after a short time the ass was completely glandered

be evacuated from the system, like all other extraneous or noxious matter which may happen to get into it; an opinion which I believe originated with the late Mr. John Hunter.

Is it not probable that the glanders (a disease which has hitherto proved incurable) may at some future period be successfully treated, by keeping this opinion in view?

This idea is thrown out as a hint to those who may wish to investigate the *glanders*, and endeavour to find out a remedy for so destructive a disease.

ABSORBENTS. Medicines that neutralize or destroy any acid matter that may happen to be in the stomach; which in the horse is indicated by a disposition to eat litter or dirt in preference to hay.

It is probable that this condition of the stomach depends upon debility, and imperfect secretion of the gastric juice, or an unhealthy action of the liver; it will be advisable, therefore, to give *tonics* and stimulants with the absorbent medicines; and these I have always found more efficacious if preceded by a laxative.

Absorbents.

1. Prepared chalk six drachms, powdered gentian two drachms, aromatic powder one drachm and half
2. Prepared kali one drachm and half, powdered quassia two drachms, powdered ginger two drachms, oil of caraway twelve drops.—Mix.
3. Prepared natron or soda two drachms, powdered columba three drachms, cassia powdered one drachm.—Mix.

These medicines may be made into balls with a little flour and sirup, or honey. One ball should be given every morning.

ALEXIPHARMICS. It was formerly supposed that certain compositions possessed the specific power of expelling poisons of all kinds from the system; of this kind were *Venice treacle*, and *Andromachus's treacle*, which were termed Alexipharmics. In

modern practice those medicines are never used, nor is any credit given to the opinion, so that the term is become obsolete.

ALTERATIVES. Medicines that gradually change the system from a diseased to a healthy state; the medicines commonly used as *alteratives*, are given in very small doses, so that their effect is scarcely perceptible; nor do they prevent a horse from continuing his usual work, or render it necessary to make any alteration in his diet. In the *Materia Medica*, we endeavoured to show the propriety of dividing alteratives into three classes, viz. laxative, diuretic, and diaphoretic, which plan we shall now follow.

Laxative Alteratives.

1. Barbadoes aloes ten drachms, Castile soap one ounce, aniseed powdered one ounce and a half, oil of cloves twenty drops. Sirup enough to form the mass for four balls, one to be given every morning until the bowels are moderately opened.

2. Barbadoes aloes one ounce, calomel one drachm and a half, golden sulphur of antimony half an ounce, powdered caraway seeds one ounce, sirup enough to form the mass, to be divided into four balls, and given like the preceding, No. 1.

3. Flower of sulphur six ounces, tartarized antimony six drachms. Mix for six doses.

This may be given in the form of powder, daily; few horses will refuse it in their corn, which should be previously moistened.

4. Liver of antimony three ounces, cream of tartar four ounces. Mix for six doses, one to be given daily, or until the bowels are opened.

Diuretic Alteratives.

1. Yellow rosin, powdered, six drachms, nitre half an ounce. Mix for one dose, to be given daily.

2. Flower of sulphur and liver of antimony, of

each half an ounce, nitre three drachms. Mix for one dose, to be given daily.

3. Prepared natron or soda (reduced to powder by exposure to the air) one ounce, Castile soap six drachms, powdered resin two ounces, liquorice powder half an ounce, Barbadoes tar enough to form a mass for six balls, one to be given daily.

Diaphoretic Alteratives.

1. Antimony, finely levigated, one ounce. To be given daily in the horse's corn.

2. Unwashed calx of antimony three drachms, powdered aniseed one ounce and a half. Mix for two doses, one to be given daily.

3. Tartarized antimony one drachm, strong muriate of quicksilver twelve grains, arrow root powdered half an ounce, grains of paradise, two drachms, oil of caraway ten drops, sirup enough to form the ball for one dose.

Remark.—This is an excellent remedy in obstinate cutaneous complaints, as surfeit, farcy, &c. The quantity of muriate of quicksilver should be gradually increased (See *Sublimate, Mat. Med.*); but if it occasion sickness, griping, or purging, or if it make the mouth sore, it must be discontinued a short time, and afterwards given in diminished doses This remark applies to all the preparations of mercury, when given as *alteratives.*

ANALEPTICS. Medicines that recruit the strength (See *Restoratives, Cordials, and Tonics.*)

The celebrated *James's Analeptic Pills* appear to be composed principally of aloes and James's powder. (See *Febrifuges.*)

ANODYNES. Medicines that relieve pain, of which opium is the most powerful. When pain is occasioned by *inflammation* it is seldom proper to employ opium, or any medicine of that kind; but when it depends upon *spasm*, or *irritation*, no medicines are so beneficial. In inflammation of the bowels, for example, opium would certainly do

much injury, but in the flatulent or spasmodic cholic it seldom fails of giving relief. (See *Anodynes, Materia Medica.*)

Anodynes.

1. Opium one drachm, Castile soap two drachms, powdered aniseed half an ounce. To be made into a ball with sirup, for one dose.

2. Opium and balsam of tolu of each one drachm, camphor one drachm and a half, Castile soap two drachms. To be made into a ball for one dose.

3. Opium two scruples, Russia castor two drachms. To be mixed with peppermint water eight ounces. To this add expeditiously of ether six drachms.

This drench must be given with great expedition, as the ether evaporates in the common temperature of the atmosphere. The effects of henbane, hemlock, and other narcotics are very uncertain, and cannot be depended upon.

ANTISEPTICS. This term is applied to medicines that correct or prevent putridity.

The only occasion, nearly, on which they are required in veterinary practice is, when wounds or bruises show a tendency to gangrene, or mortification, discharging an offensive, ill-looking matter (See *Antiseptics, Materia Medica.*)

Antiseptics are employed also externally. (See *Poultice* and *Fomentation.*)

Antiseptic Mixture for Gangrene or Mortification of the external parts.

1. Take of Peruvian bark one ounce, powdered ginger two drachms, opium one drachm. Mix for one dose.

2. Powdered snake root one ounce, salt of hartshorn one drachm, cassia powdered one drachm and a half. Mix for one dose.

3. Opium and salt of hartshorn of each one drachm, camphor one drachm and a half, aromatic powder two drachms. Mix for one dose.

℞. Colombo root powdered one ounce, capsicum one drachm and a half, oil of caraway fifteen drops.

Remark.—These receipts may be given either in the form of balls or drenches, but I think the latter preferable, as we can employ a vehicle that will contribute considerably to the effect of the medicine. The best liquid for this purpose is port wine; porter, or good strong beer, will, however, generally answer the purpose very well. The drench should be given once or twice in twenty-four hours, according to the effect produced, and the nature of the case. A strong decoction of oak bark is not a bad vehicle for those medicines. We have before observed, that *opium* is liable to produce costiveness: when this effect is observed from it, a glyster of water-gruel will be useful. The dose of bark and snake-root may be increased when the quantity prescribed does not produce the desired effect.

A small addition may also be made to the dose, of salt of hartshorn, and camphor, should it be thought necessary. We have not recommended any receipt for *internal* gangrene, or mortification, because it is always fatal in the horse, and they are not subject to those disorders termed putrid, or typhus, fevers, so dangerous in the human subject: but in cases of *external* mortification the above receipts will be found extremely serviceable; they should be assisted, however, by a proper diet, consisting of such food as is nutritious and easy of digestion, such as bruised oats and malt, with a moderate quantity of carrots. When the horse is off his food, he should be drenched with good water-gruel, or arrow root, and sweet wort.

Great attention is required in the groom, as well as frequent and assiduous application of proper fomentations, &c.

ANTISPASMODICS. Medicines that cure, or relieve spasmodic diseases. (See *Materia Medica*

Antispasmodic Mixture for Flatulent Cholic.

1. Oil of turpentine two ounces, cold water-gruel one pint. Mix for one dose.

Remark.—To an inexperienced person, this might appear a very formidable remedy; but it is not only very safe, but seldom fails of giving relief: many practitioners give it in much larger doses; indeed, I have often known four ounces given at a dose, with the best effect.

2. Camphor one drachm and a half, ether six drachms, essence of peppermint from one to two drachms, water one pint. Mix for one dose.

Essence of peppermint is made by dissolving one part of oil of *peppermint* in five of rectified spirit.

The bottle must be well shaken, in order to mix the ether with the other ingredients, and the camphor should be first dissolved in the *essence of peppermint.*

3. Tincture of opium one ounce, oil of juniper two drachms, sweet spirit of nitre one ounce, water a pint. Mix for one dose.

4. Opium one drachm, camphor one drachm and a half, powdered ginger two drachms, Castile soap three drachms. To be made into a ball with sirup, for one dose.

Remark.—The *flatulent* or *spasmodic cholic*, must be carefully distinguished from the *inflammatory*, and from that which depends upon costiveness. It is *always* necessary to empty the bowels by means of glysters; and should the horse have appeared dull and heavy, previous to the attack, it will be adviseable to bleed. If costiveness attends it, give a laxative drench after the paroxysm, which will prevent its return.

Those who travel with crib-biting horses, or one that is often attacked with this complaint, should always have a remedy at hand, for which purpose No. 4. is recommended. It may be easily dissolved in strong beer or peppermint water, and given as a drench.

Antispasmodic Mixtures for Locked Jaw.

1. Opium one drachm and a half, camphor two drachms, ginger three drachms. To be made into a ball with syrup, for one dose, or mixed with some stimulating fluid (such as strong brandy and water, about eight ounces; or eight ounces of spirituous peppermint water), and given as a *drench.*

2. Ether one ounce, compound tincture of cardamoms four ounces, peppermint water six ounces. Mix for one dose.

It is necessary to observe, that the *locked jaw* generally proves fatal to horses; but it is worth while, when the jaws are not so firmly closed as to prevent the administering of medicine, to try the above. I have known one case in which camphor and opium succeeded; it was necessary, however, to give it in considerable doses, beginning with that which we have prescribed, and gradually increasing it. Some practitioners recommend *blisters*, and others *fomentations*, to the jaws; stimulating glysters and the cold bath have also been advised. Strong blisters to the spine, from the withers to the tail, have been recommended as the best remedy.

Antispasmodic Mixtures for old or chronic Cough.

1. Assafœtida half an ounce, powdered squill one drachm, Castile soap and Venice turpentine of each two drachms, balsam of Peru enough to form the ball. Mix for one dose.

2. Gum ammoniacum half an ounce, balsam of tolu two drachms, liquorice powder and powdered squills of each one drachm, oil of aniseed twenty drops, balsam of sulphur enough to form the ball for one dose.

3. Powdered squill and camphor of each one drachm, powdered opium half a drachm, Castile soap two drachms, strained storax one drachm and a half. To be made into a ball with sirup, for one dose.

4. Powdered fox-glove half a drachm, extract of hemlock two drachms. Mix for one dose.

Remark.—I have generally found the above receipts more efficacious, when preceded by a *laxative ball*, or a course of the *laxative alteratives*.

They are to be given every morning until the desired effect is produced, unless, in the mean time, they should take off the appetite, or occasion profuse *staling*, in which case they should be discontinued for a few days. When any appearance of *fulness*, or *plethora*, accompanies those coughs, bleeding is advisable; and whenever costiveness occurs, a laxative ball should be given.

Coughs which arise from irritation about the throat, are distinguished by their almost constantly harassing the animal; and these are often relieved by emollient drinks, and the following:

5. Opium one drachm, Castile soap two drachms, camphor one drachm and a half, oil of aniseed twenty drops. To be made into a ball, with sirup, for one dose.

In speaking of the *modus operandi* of *expectorants*, we observed, that the most effectual medicines of that class possessed a *diuretic* quality, and that probably, by carrying off some of the watery parts of the blood by the kidneys, they produced their peculiar effect upon the lungs, diminishing the secretion of thin mucus in the branches of that organ, and removing the cough, which an abundant secretion had occasioned. Most of the medicines we have here recommended for chronic cough, possess a diuretic quality, and it is probable, that their good effects depend more upon this, than upon their *antispasmodic* power.

Some of the medicines, however, are certainly antispasmodics, and as the greater part are commonly said to act in that way, we have brought them under that head. (See *Expectorants.*)

Antispasmodic Mixtures for suppression of Urine, or pain and difficulty in voiding it.

1. Purified nitre one ounce, camphor two drachms.

Remark.—This may be made into a ball with mucilage of gum arabic, and a little flour, or mixed with linseed infusion, or any mucilaginous vehicle, and given as a drench. This medicine has proved so uniformly successful, that I shall not add any other formulæ, but must observe that an emollient glyster is often a necessary assistant, and when the horse appears to be of a full habit, or *plethoric*, bleeding is also advisable. If the complaint returns in a short time, give a laxative drench after repeating the above medicine.*

It is the opinion of many practitioners, that the *staggers* sometimes depend upon a diseased condition of the stomach, and that certain *antispasmodics* are the best remedies; I am satisfied, however, that copious and timely bleeding is almost always necessary in this complaint, but do not dispute the occasional utility of those medicines, particularly the following:

1. Volatile tincture of valerian one ounce, powdered valerian one ounce and a half, peppermint water eight ounces. Mix for one dose.

2. Fœtid spirit of ammonia one ounce, camphor one drachm, ether half an ounce, mint water eight ounces. Mix for one dose.

3. Salt of hartshorn, one drachm and a half, assafœtida six drachms, oil of peppermint ten drops.

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* The author is aware that pain and difficulty in voiding urine, frequently in the human body, depend on inflammation of the bladder, in which case nitre would be an improper medicine. This is sometimes the case in the horse, but the symptoms most commonly arise from a cause which the above medicine speedily removes; and which may be distinguished from an inflammatory affection, by its not being accompanied by quick pulse, loss of appetite, and other symptoms of fever and *inflammation of the bladder*.

To be made into a ball, for one dose, by means of a little syrup and flour.

Remark.—I have seen a good effect from the following cathartic drench.

Cathartic Drench.

Barbadoes aloes six drachms, calomel half a drachm, myrrh in powder two drachms, ginger ditto, one drachm and a half. Syrup enough to form the ball, for one dose.

Remark.—In *staggers* the bowels are generally rather torpid, and in some cases are not affected by the strongest purgatives; the above dose, therefore, will, in general, operate only as a mild laxative: for a large draught horse one ounce or ten drachms of aloes will not be too much.

ASTRINGENTS. Medicines that suppress unnatural or increased evacuations, such as *diarrhœa*, *diabetes*, and profuse sweating.

It is commonly supposed that *astringents* act mechanically, by constringing or condensing the solids. This opinion, however, does not appear to be well founded, since *opium*, which is, in many cases, the most powerful remedy in morbid evacuations, does not possess those principles which are said to constitute astringency, which are the *gallic acid*, and *tannin*.

Medical writers generally class the preparations of iron, copper, zinc, and lead, with astringents; these, however, have not been found very useful as internal remedies in the horse; and whenever they prove serviceable, it is in cases of debility, in which tonics are required.

Astringents for Diarrhœa.

1. Opium one drachm, ginger one drachm and a half, prepared chalk six drachms. Mix into a ball with treacle, syrup, or honey, for one dose.

2. Gum kino two drachms, alum half an ounce, aromatic powder e drachm and a half, Castile

soap two drachms. Honey enough to form the ball, for one dose.—Mix.

3. Powdered rhubarb one ounce, prepared natron two drachms, cassia powdered one drachm and a half, oil of mint twenty drops. To be mixed as above for one dose.

Remark.—I have often seen mischief done by giving astringents in diarrhœa too hastily; and think it advisable, in general, to give in the first place a laxative. There are external applications, termed astringents, which are those that dry up sores, or diminish their discharge.

Astringent Ball for Diabetes.

Opium one drachm, powdered ginger two drachms, powdered oak bark one ounce. To be given in a pint of oak-bark decoction.

External Astringents.

1. Powdered alum four ounces, armenian bole one ounce.—Mix.
2. White vitriol four ounces, flowers of zinc one ounce.—Mix.
3. A strong goulard mixture.
4. A solution of blue vitriol.
5. Muriate of iron one ounce, water eight ounces.—Mix.
6. Flowers of zinc (alone.)

Astringent Ointments.

1. Venice turpentine four ounces, hog's lard six ounces. To be melted over a slow fire; and when rather cool, but while it is liquid, add sugar of lead, finely powdered, two ounces. Stir the mixture until it is cold.

2. Hog's lard four ounces, oil of rosemary two drachms. Finely powdered white lead, an ounce and a half—Mix.

Remark.—The astringent powders and ointments are designed chiefly as remedies for the grease, after

the inflammation of the part has been in great measure removed by proper poultices: but the ointment is applicable only to those ulcerations or cracks, which are so often an effect of that disease.

ATTENUANTS. Medicines that were supposed to attenuate or thin the blood, many diseases being thought at that time to depend upon a preternatural thickness, or viscidity of that fluid. This doctrine, however, is now known to be erroneous, and the term of course not used. The medicines thus named were soap, nitre and other neutral salts, and water.

BALLS. We have made some observations on this subject in the Materia Medica; but it is necessary to add in this place, that whenever a ball is found to exceed the proper size, which is that of a middle-sized egg, it is advisable to divide it, as much injury has been done by those large balls, which are made by farriers, particularly when they have been kept so long as to become dry. In making balls, the dry ingredients should be finely powdered, and well mixed; the liquid for forming them into balls, must be adapted to the nature of the other ingredients. If they are of a resinous kind, such as gum guaiacum, &c. balsam of peru, balsam of capivy, or Venice turpentine, are the proper substances to form the ball: but if they consist of roots, bark, or wood, &c. syrup, treacle, or honey, may be used for the purpose. When the ingredients are difficult of cohesion, which is the case with nitre, golden sulphur of antimony, and many others, the best thing for uniting them into a ball is mucilage of gum arabic. This will answer the purpose more effectually, if a little starch or flour be first mixed with the powders. When a ball contains any very stimulating or acrid ingredient, such as essential oil, cayenne pepper, &c. and particularly if there be arsenic, or sublimate in it, the stomach should not be empty when it is given; and some water or water-gruel should be given immediately after

It is generally necessary to give balls wrapt in paper; but for this purpose the thinnest tissue should be preferred.

BLISTERS. Applications which inflame the skin, and cause watery bladders to form upon it.

They are used on various occasions, and form a very important class of remedies.

Mild Blister Ointment.

1. Hog's lard four ounces, Venice turpentine one ounce, powdered cantharides six drachms.—Mix.

2. Oil of bay three ounces, oil of origanum two drachms, powdered cantharides half an ounce. Mix.

Stronger Blister Ointment.

1. Oil of turpentine one ounce, vitriolic acid by measure two drachms. Mix carefully in a chimney or open place, and add of hog's lard four ounces, powdered cantharides one ounce.—Mix.

2. Mercurial ointment and oil of bay of each two ounces, Barbadoes tar one ounce, oil of rosemary two drachms, cantharides powdered one ounce. Mix.

3. Common tar four ounces, vitriolic acid three drachms. Mix carefully, previously melting the tar, oil of turpentine half an ounce, hog's lard two ounces, cantharides powdered one ounce and a half.—Mix.

Strongest Blister.

1. Strong mercurial ointment four ounces, oil of origanum half an ounce, finely powdered euphorbium three drachms, powdered cantharides half an ounce. Mix.

2. Strong mercurial ointment two ounces, oil of origanum two drachms, sublimate finely powdered two drachms, cantharides powdered six drachms. Mix.

Remark.—The strong blister, particularly the last, is a good remedy for splents and bone spavins, but they must be used with caution. The last is apt

to destroy the hair, an inconvenience that must often be submitted to in curing a bone spavin or splent. *Blisters* are the most effectual applications for removing those swellings and lamenesses, which are the consequences of strains, bruises, and hard work; but they should never be applied while the inflammation is considerable. When blisters are employed for the removal of bog or blood spavins, curbs, or windgalls, they general require to be repeated two or three times. Blisters are often employed to remove *internal* inflammation, particularly when the lungs are attacked, for this purpose I think the following mustard blister by far the best.

Mustard Blister.

Best flour of mustard, eight ounces, water enough to make it into a paste.

To this, add oil of turpentine two ounces, water of pure ammonia one ounce. To be well mixed, and rubbed into the sides with the hand; if the bowels are affected, it should be rubbed all over the belly; and if the kidneys, upon the loins. The friction should be continued for some time, and the parts afterwards covered. After a short time, swelling and inflammation will take place, and sometimes in a considerable degree; but it will greatly diminish the *external inflammation*, and often preserve the animal's life. (See *Bowels, Materia Medica.)*

BACK OINTMENT. (See *Ointment, Liniments* and *Lotions* for *Sore Backs.)*

BITES. (See *Ointments* for *Bites* and *Stings.)*

BOTTS. We have already observed that there is no medicine with which we are acquainted, that is capable of destroying and discharging *botts* from the body, though they often pass off spontaneously about the spring of the year, and generally one at a time. But a saline substance has been lately brought from the East Indies, under the name of *sal indus*, which is said to possess this property: I believe however,

that other worms have been mistaken for *botts*; for if given in doses sufficient to purge the horse, it sometimes discharges common worms. (See *Mat. Med. Sal Indus.*)

The most eligible mode of employing *sal indus* as a remedy for worms is the following: let the horse fast for four or five hours very early in the morning, then give a quart of sweet wort, with a little honey, and about half an hour after the following drench: sal indus four ounces, Barbadoes aloes two or three drachms, water about a pint. First dissolve the aloes in hot water, and then add the salt. This will generally act as a brisk purgative, therefore the horse will require the same attention and management as if he were under physic.

CARMINATIVES. Remedies for the flatulent cholic, commonly termed *fret* or *gripes*. (See *Antispasmodics*, where several receipts are given for the purpose.) We shall add in this place a few domestic remedies, which may be employed when medicines cannot be procured in time.

1. A pint of strong peppermint water, with about four ounces of gin, and any kind of spice.
2. A pint of port wine, with spice or ginger.
3. Half a pint of gin diluted with four ounces of water, and a little ginger.

I have seen the complaint removed by warm beer and ginger, or a cordial ball, mixed with warm beer.

It may not be amiss to repeat the caution we have given, respecting the necessity of distinguishing the *flatulent* from the *inflammatory cholic*; as in the latter, the above remedies would be highly pernicious.

CATHARTICS. Medicines that excite purging. The preparations employed for this purpose are commonly termed physic.

Mild Physic.

1. Barbadoes aloes half an ounce, prepared natron one drachm and a half, powdered cassia one

drachm, oil of aniseed twenty-five drops. To be made into a ball with honey for one dose.

2. Barbadoes aloes half an ounce, calomel half a drachm, ginger one drachm, Castile soap three drachms, oil of aniseed twenty drops. Sirup enough to form the ball for one dose.

Strong Physic.

1. Barbadoes aloes six drachms, almond soap three drachms, oil of caraway twenty drops. Aromatic confection enough to form the ball for one dose.

2. Barbadoes aloes six drachms, calomel one drachm, almond soap three drachms. Aromatic confection enough to form the ball for one dose.

Remark.—The strength of the above balls may be varied by increasing or diminishing the quantity of aloes. A *cathartic* may be given in the form of a drench when a speedy effect is required; for this purpose dissolve one of the balls in warm water-gruel.

There is a wonderful difference in horses with respect to the quantity of purgative medicine necessary to produce a proper effect; and as violent purgation, or too strong physic, often does much injury, and sometimes proves destructive, it is always advisable to give a moderate dose to a horse whose strength and constitution we are not acquainted with. I have often met with horses that were effectually purged by half an ounce of aloes, while to others I have given an ounce, without any effect. On the other hand, again, I have frequently seen the same dose do much injury: in one case, a horse was nearly destroyed by taking half an ounce of aloes, and half a drachm of calomel. I lately met with an instance of a horse being evidently killed by taking one ounce. Some, nay several, have been destroyed by the doses recommended in books of farriery, in which aloes have been prescribed in the dose of one ounce and a half. As the same

time, it must be acknowledged, that these accidents are not *very* frequent, and that hundreds of horses take those strong doses apparently with impunity. Still there is one bad effect which must result from violent purgation, of which few people are aware. The debility thus produced lays a foundation for many diseases; and I have known even blindness produced by it: the whole system is rendered more irritable, and consequently more susceptible of disease.

CARDIACS. (See *Cordials.*)

CAUSTICS. Substances which burn or destroy any part of the body to which they are applied. They are of great use in veterinary practice, for destroying unnatural excrescences, cleansing foul ulcers and sinuses, so as to bring them to a healthy state, and curable by more simple applications Caustics may be divided into liquid and solid, strong and mild. The mild caustics are called also escharotics, and are more useful than the stronger caustics, which are too violent in their action in many cases, and often require to be diluted with water, spirit, or unctuous substances, according to the nature of the case.

Solid Caustics, Strong.

1. The red-hot iron. (See *Firing, Materia Medica.*)
2. Pure kali with lime.
3. Nitrated silver, or lunar caustic.
4. Nitrated copper.

Mild Caustics, Solid.

1. Acetated copper, or distilled verdigris.
2. Vitriolated copper, or blue vitriol.
3. Red nitrated quicksilver, or red precipitate.
4. Burnt alum.
5. Common verdigris.

Remark.—The strong caustics are generally sold in a convenient form for application; but the *mild* require to be finely powdered and sprinkled on the

ulcer: they are sometimes mixed with digestive ointments to increase their power.

Strong Caustics, Liquid.

1. The vitriolic and nitrous acids, which are very powerful, and must be used cautiously; they may be diluted with different proportions of water, so as to be applicable to many purposes.

2. Nitrous acid one ounce, quicksilver half an ounce. Place them in a large gally-pot, or open phial, and take care to avoid the noxious fumes which arise. When the quicksilver is perfectly dissolved and the mixture cold, it may be put into a smaller phial and corked.

Remark.—This is a strong and efficacious caustic; it is a certain remedy for the foot-rot in sheep, and often effectual in canker of the horse's foot, provided these complaints are properly managed in other respects; it is sometimes mixed with melted hog's lard, to form a strong *detergent* ointment.

3. Nitrous acid one ounce, copper filings half an ounce. Mix. The copper is to be dissolved like the former, the fumes being equally hurtful. This caustic is very little, if at all, inferior to the former, and applicable to the same purposes.

4. Muriate of antimony, or butter of antimony.

5. Muriate of quicksilver or sublimate one drachm muriated acid two drachms.

Remark.—This is a very powerful caustic, and generally requires dilution.

Mild Caustics, Liquid.

1. Solution of blue vitriol.

2. Any of the stronger caustics, except butter of antimony, diluted with an equal quantity or more of water.

3. Muriatic acid.

4. Muriate of iron.

CHARGES. Adhesive plasters which are softened or liquified in a ladle by a gentle heat, and then

applied to the legs, from the knee and hock joints to the foot, as a remedy for windgalls and old lamenesses, arising from strains or hard work.

As soon as the plaster is applied, the part is covered with short tow, and the horse sent to grass.

A Charge. Burgundy pitch four ounces, Barbadoes tar six ounces, bees' wax two ounces, red lead four ounces. The three first are to be melted together, and then the latter is to be added. The mixture is to be constantly stirred until sufficiently cold to be applied; and if it prove too thick when cold, it may be softened with a little oil or lard.

Farriers generally mix dragon's blood (as it is commonly called) from an idea that it has a strengthening quality; others recommend bole armenic. It appears, however, that charges act as a bandage only, compressing equally, and for a considerable time, the joints, tendons, &c.

CONDITION. This term implies that a horse enjoys the highest degree of health and vigour of which he is capable. A horse may be fat and sleek, but unfit for those exertions which are so often required from him. Many horses are destroyed, and numerous diseases produced by forcing them to exertions to which they are unequal; wherefore, it is of great importance, that their *condition* should be brought to perfection, before they are employed in any severe exercise, such as racing, hunting, quick travelling, or heavy draught. In getting horses into *condition*, great advantage will be derived from the occasional use of laxatives and diuretics, in the form of *alteratives;* but regular exercise proportioned, and adapted in point of duration and *pace*, to their *feed*, the kind of employment for which they are required, and the state of their health is of the last importance.

CORDIALS. Medicines which cause a *temporary* augmentation of strength and spirits; and if employed properly, are, on some occasions, capable of producing permanently good effects. They are more

beneficial in general to old horses than to young; more particularly to those that have been worked hard, and accustomed to such medicines, as well as to high feeding and warm stables. Cordials become remarkably serviceable to draught horses, when they work hard, and have but indifferent forage. They gently stimulate the stomach, and increase its digestive power; whereby they are capable, I apprehend, of preventing on many occasions, that fatal disease the *staggers*.

Cordials have an excellent effect, when the animal has been fatigued with a long run, or a severe journey, refusing his food, and seemingly exhausted. A *good* cordial preparation at such times restores the appetite, promotes digestion, and renovates the strength and spirits. I do not mean, however, that the *cordial balls* commonly made up, have this useful property. On the contrary, they often do harm, but most commonly they are quite inert; for example, Bracken's cordial, which is the receipt generally used, has a considerable proportion of sulphur, and other useless drugs, in its composition.

Cordial Balls.

1. Powdered caraway seeds six drachms, ginger two drachms, oil of cloves twenty drops, honey or treacle enough to form the ball for one dose.

2. Powdered aniseed six drachms, powdered cardamons two drachms, powdered cassia one drachm, oil of caraway twenty drops. To be made into a ball with honey, for one dose.

3. Powdered caraway seeds half an ounce, grains of paradise three drachms, aromatic powder one drachm, essential oil of cummin seed twenty drops. To be made into a ball with honey for one dose.

4. Powdered aniseeds half an ounce, ginger three drachms, oil of caraway 15 drops. To be made into a ball for one dose.

Remark.—The above receipts afford a sufficient variety of preparations. The strength may be easily

increased or diminished, when found necessary. They are all of a very stimulating nature, and not to be employed but on the occasions we have pointed out. An indiscriminate and frequent use of cordials, does great mischief, and is the cause of many diseases; though, as we have before observed, when judiciously employed, they are extremely beneficial. We shall now give some receipts for *pectoral cordials*, which differ from the foregoing, by being less stimulating, and containing ingredients that promote expectoration, and alleviate or cure *old coughs*, which are accompanied with some degree of debility, flatulency, and indigestion; when costiveness occurs during their use, it is to be removed by a gentle laxative. (See *Laxatives.*)

Pectoral Cordial Balls.

1. Powdered aniseed half an ounce, powdered squill one drachm, powdered myrrh one drachm and a half, balsam of Peru enough to form the ball for one dose.

2. Liquorice powder half an ounce, gum ammoniacum three drachms, balsam of tolu one drachm and a half, powdered squill one drachm, anisated balsam of sulphur, enough to form the ball for one dose.

3 Elecampane powder half an ounce, ginger one drachm and a half, powdered squill one drachm, oil of aniseed twenty drops, sirup of tolu enough to form the ball for one dose. (See *Antispasmodic Mixtures for Chronic Coughs.*)

Medicines are sometimes named *stomachic* and *tonic* cordials: for these we refer the reader to the article *Tonics* and *Stomachics.*

CORROSIVES. (See *Caustics.*)

DECOCTIONS. These are made by boiling medicines in water until the latter has extracted all its virtues. This operation, it is obvious, is not suited to those substances, whose medical qualities depend a volatile, or evaporable principle.

DEMULCENTS. Medicines which sheathe parts, so as to defend them from the action of any irritating substance. The best medicines of this kind are, a solution of gum arabic, decoction of linseed or marshmallows, or any thing that is oily and mucilaginous. They are employed chiefly in irritation of the bowels, kidneys, and bladder; also in coughs and irritation of the lungs.

DEOBSTRUENTS. Medicines that are supposed to be capable of removing *obstructions*. Obstinate coughs and asthmas have been attributed to this cause; and the most *ponderous* medicines were recommended for their removal, at a time when many diseases and functions of animals were explained upon mechanical principles. Thus we find cinnabar of antimony, Æthiop's mineral, &c. prescribed on those occasions. The theory has been found erroneous, and of course the practice built upon it must be imperfect. It is necessary, however, to observe, that certain medicines termed *deobstruents*, such as calomel, salt of steel, &c. have sometimes been found useful in those diseases of the liver which are said to arise from obstruction.

DETERGENTS. A name given to applications which have the property of cleansing foul ulcers, and bringing them to a healthy state, so that they may be cured by more simple remedies. The term has been applied also to *internal* remedies which were supposed to heal ulceration of the lungs, kidneys, &c. but we shall confine it to *external* applications, being unacquainted with any medicine that has the power of curing ulcerated lungs, or kidneys.

Detergent Ointment.

1. Mutton suet four ounces, Venice turpentine six ounces, red precipitate finely powdered two ounces. Mix. Melt the suet and turpentine over a slow fire, and when nearly cold stir in the powder; continue stirring until cold.

2. Hog's lard four ounces, olive oil one ounce, strong liquid caustic No. 2 one ounce. Melt the oil and lard, and while the mixture is liquid, but rather cool, add the caustic, and continue stirring with a *wooden* instrument until it is quite cold.

Detergent Liniment.

1. Oil of turpentine one ounce, vitriolic acid by measure two drachms. Mix cautiously in a large gally-pot, or open phial, and in a situation where you may avoid the suffocating fumes which arise. When the mixture is complete and cool, add of linseed oil two ounces.

2. Red precipitate half an ounce finely powdered, linseed oil half an ounce. Mix well in a mortar, and add of oil of origanum two drachms.

3. Chrystallized verdigris finely powdered one ounce, olive oil one ounce. To be well mixed in a mortar; then add of Venice turpentine half an ounce.

Detergent Lotions.

1. Vitriolated copper one ounce, vitriolic acid twelve drops, water four ounces. Mix.

2. Nitrous acid one ounce, vitriolated copper half an ounce, water eight ounces. Mix.

DIAPHORETICS. Medicines that increase the insensible perspiration.

In veterinary medicine it is necessary to divide *diaphoretics* into two kinds, which may be called *antispasmodic* and *stimulating*. The former kind is applicable in fevers, and receipts or compositions of that kind will be found under the head *Febrifuges*. The stimulating *diaphoretics* are calculated for horses that are hide-bound, and have rough, unhealthy looking coats, without any other appearance of disease.

Stimulating Diaphoretics.

1. Emetic tartar one drachm and a half, camphor half a drachm, ginger two drachms, opium one scru

ple, oil of caraways fifteen drops, honey enough to form the ball for one dose.

2. Powdered caraway seeds six drachms, antimonial powder two drachms, ginger one drachm, oil of aniseed twenty drops, honey enough to form the ball for one dose.

3. Unwashed calx of antimony two drachms, ginger and salt of hartshorn of each one drachm, opium two scruples, powdered aniseed half an ounce, oil of caraway fifteen drops, sirup enough to form the ball for one dose.

Remark.—It is essentially necessary to assist the above remedies by regular exercise (at least two hours every day), which may be carried so far as to excite moderate sweating; but the greatest attention must be paid as soon as the horse gets into the stable; nor should the groom discontinue *wisping* until he is perfectly dry

DIGESTIVES. Applications which promote suppuration in wounds or ulcers.

Digestive Ointment.

1. Hog's lard four ounces, bees' wax one ounce, Venice turpentine three ounces, red nitrated quicksilver finely powdered two ounces. Melt the three first over a slow fire, and while the mixture is liquid, but nearly cold, stir in the powder.

Powdered *verdigris* is sometimes used instead of *nitrated quicksilver*, but the latter is certainly preferable. We find in some books very elaborate compositions recommended as *digestives*, in which are frankincense, gum elemi, balsam of tolu, common resin, and various other substances; but the formula, or receipt, we have given will be found adequate to every purpose for which *digestives* are wanted, as it may be rendered more or less stimulating, by varying the proportion of *red nitrated quicksiiver*, or, as it is more commonly called, *red precipitate*. Oil of turpentine, also, will render it more stimulating.

DILUENTS. Medicines which dilute the blood. If any thing has this power it must be water, which may be medicated according to the judgment of the practitioner.

DIURETICS. Medicines that stimulate the kidneys, and increase the evacuation of urine.

These are much used in veterinary practice, in cases of grease, swelling of the legs, and other parts; they are employed also as a preventive in horses that are *subject* to those complaints, and with great advantage. They are given either in the form of *ball* or *powder*, and are very convenient remedies, as they do not prevent a horse from working moderately.

Diuretic Ball.

1. Castile soap and powdered resin of each three drachms, sal prunella powdered four drachms, oil of juniper one drachm. Mix for one dose. First beat the soap and oil of juniper in a mortar until they become a soft uniform mass, then add the powders, having previously mixed them well.

Should any addition be necessary to form the ball, use mucilage of gum arabic, honey, or flour.

2. Camphor and oil of juniper of each one drachm, powdered nitre half an ounce, Castile soap three drachms. Mix for one dose. First mix the camphor and oil, then add the soap, and beat the mixture well, lastly the nitre, and as much flour as will give it a proper consistence.

Diuretic Powders.

1. Resin and nitre of each half an ounce. Mix for one dose.

2. Nitre six drachms, camphor one drachm and a half. Mix for one dose.

DRENCHES. (See *Materia Medica.*)

EMBROCATIONS. External applications are often so named. The term seems to imply that it is

to be well rubbed on the affected part with the hand, since its effect will be considerably promoted by friction of this kind.

Mustard Embrocation.

Take of the best flour of mustard four ounces, water of ammonia one ounce, oil of rosemary or oil of turpentine one ounce, water a sufficient quantity to form a thin paste, which is to be well rubbed on the affected part.

Embrocation for Strains and Bruises.

1. Soft soap two ounces, oil of bay one ounce, water of pure ammonia one ounce and a half, oil of origanum half an ounce, camphorated spirit of wine two ounces. Mix.

2. Camphor half an ounce, oil of turpentine one ounce and a half, spirit of wine two ounces. Mix.

3. Soap liniment two ounces water of pure ammonia half an ounce. Mix.

Embrocation for Callous Swelling, or Bog-Spavins, Windgails Enlarged Joints, &c.

Strong mercurial ointment two ounces, camphor half an ounce, oil of rosemary two drachms, oil of turpentine one ounce.

Blistering Embrocation.

Strong mercurial ointment two ounces, oil of bay one ounce, oil of origanum half an ounce, powdered cantharides half an ounce. Mix.

EMOLLIENTS. Medicines that soothe and allay irritation: they are employed both internally and externally. Like demulcents, they defend parts from irritation by their mucilaginous quality, but they take off irritation in another way, that is, by diluting, or weakening the irritating substance. (See *Materia Medica.*)

When the bowels, kidneys, or bladder are inflamed or irritated, *emollient* liquids are extremely

useful; these are made by boiling mucilaginous and oily seeds or vegetables in water, or simply by dissolving gum in water; in *external* inflammation, or irritation, warm water is the best *emollient*; but it is commonly supposed that the addition of mucilaginous vegetables renders it more efficacious: I do not believe, however, that this opinion is well founded; nor do I think that any kind of unctuous application is proper in cases where *emollients* are wanted, though we frequently hear various kinds of ointment extolled for their *emollient* virtues.

Emollient Drench for Coughs.

1. Linseed four ounces, boiling water three pints. Let them stand together several hours, then strain off the liquid, and add four ounces of honey, for two doses.

2. Marshmallow root bruised four ounces, water one quart. Let them simmer over the fire a short time, then strain off the liquor and add four ounces of honey, two ounces of linseed oil, and one ounce of powdered gum arabic. This is sufficient for two doses.

Many practitioners add to every dose of these drenches, four or six drachms of nitre, which, on some occasions, I believe is serviceable, but we have omitted it here, as *nitre* cannot be considered as an *emollient*.

Emollient Fomentations.

1. Marshmallow root eight ounces. To be boiled in three quarts of water for an hour or two. The strained liquor makes the fomentation.

It is only necessary to add, that every kind of mucilaginous vegetable is supposed to impart to water an *emollient* quality, and render it fit for an *emollient fomentation*. (See *Fomentations.*) Ointment of elder and marsh-mallows, are used by farriers as *emollients*.

EMULSIONS. Mixtures of oil and water, by means of an alkali, or a mucilage.

Emulsions are used principally in coughs, either alone, or as a vehicle for other medicine.

Simple Emulsion.

Linseed oil two ounces, honey three ounces, soft or distilled water one pint, prepared kali one drachm. Dissolve the honey and kali in the water, and afterwards add the linseed oil; the mixture is then to be well shaken, and it will assume a milky appearance.

Pectoral Emulsion for Coughs.

1. Simple emulsion eight ounces, camphor one drachm, opium powdered half a drachm, oil o aniseed thirty drops. Let the camphor be powdered, and rubbed in a mortar with a little sugar, the oil of aniseed, and the opium, then add the *emulsion* gradually.

ERRHINES. Medicines that excite sneezing when applied to the internal parts of the nose. For this purpose, common snuff, with a little powdered hellebore, may be employed. It has been recommended in the gutta serena, or that kind of blindness, in which the eye, to a common observer, appears sound, and which is caused by a palsy of the optic nerve. *Errhines* are sometimes applied to the noses of glandered horses; the sneezing it occasions, causes all the matter that is formed to be thrown off; the nose being then carefully wiped with a cloth, the horse is sold as sound, there being no appearance of a discharge for two or three hours afterwards. This abominable fraud is only practised at country fairs, by the lowest order of horse dealers who have no reputation to lose.

ESCHAROTICS. This term is applied to the mild caustics, such as red precipitate and verdigris. (See *Caustics.*)

EXPECTORANTS. Medicines that excite or

promote a discharge from the lungs, and thereby remove or alleviate coughs and thickness of wind.

There is another way in which it is probable expectorants relieve cough, &c. These complaints may sometimes be occasioned by a redundant secretion in the branches of the windpipe; in such cases, medicines that diminish the quantity of fluid in the whole system, by increasing the secretion of urine, or perspiration, will of course relieve the complaint, by lessening the quantity of fluid in the branches of the windpipe: hence we may explain the operation of the balsams, turpentines, and various other medicines that are employed as expectorants with good effect, and which manifestly possess a diuretic quality.

Expectorant Balls.

1. Gum ammoniacum half an ounce, powdered squill one drachm, Castile soap two drachms. Honey enough to form the ball for one dose.

2. Assafœtida three drachms, galbanum one drachm, salt of hartshorn half a drachm, ginger one drachm and a half. Honey enough to form the ball for one dose.

3. Aromatic powder two drachms, camphor one drachm and a half, powdered squill, and balsam of tolu of each one drachm. Honey enough to form the ball for one dose.

4. Balsam of sulphur four ounces, Barbadoes tar two ounces, oil of aniseed two drachms. Liquorice powder, enough to give the mass a proper consistence.

The dose is about an ounce and a half.

Remark.—No. 4. is recommended upon the authority of a farrier in considerable practice, who assures me he has often found it efficacious.

EXTRACTS are made by infusing any substance in a liquid that is capable of dissolving and *extracting* its essential principle, so that it may be procured, free from the other useless parts. When the essential

principle is of a resinous nature, we employ rectified spirit to extract it; if it be a compound of gum and resin, proof spirit is better adapted.

By evaporation, we procure the *extract* in a solid state.

EYE WATER. This term is applied to liquids that remove inflammation from the eye, or that are employed for that purpose.

1. Extract of saturn one tea-spoonful, camphorated spirit two tea-spoonsful, elder-flower water half a pint. Mix.

2. Vitriolated zinc one drachm, water one pint. Mix.

3. Vitriolated zinc and acetated lead of each one drachm, water twelve ounces.

4. Opium one drachm, water four ounces. Mix.

FEBRIFUGES. Medicines that tend to relieve or remove fever.

Fever Balls.

1. Camphor one drachm and a half, nitre four drachms, calomel and opium of each twenty grains, sirup enough to form the ball for one dose.

2. Unwashed calx of antimony two drachms, camphor one drachm, opium half a drachm, compound powder of tragacanth two drachms, honey enough to form the ball for one dose.

3. Emetic tartar one drachm and a half, or two drachms, compound powder of tragacanth two drachms, sirup enough to form the ball for one dose.

4. Camphor two drachms, nitre one ounce. Mix for one dose. The above balls are to be given every day or oftener, if the symptoms require it. No. 4 generally acts as a diuretic, and therefore must not be persevered in too long, as it may occasion so profuse an evacuation of urine as to injure the animal. It is proper to observe here, that no medicine will avail much in fever, if bleeding is neglected; and if the fever is violent, external inflammation should be raised by means of rowels in the chest

and belly: and the mustard blister applied to the sides.

FOMENTATIONS. This term is applied to various kinds of decoctions, or medicated liquids, which are employed externally to bathe or foment any inflamed or painful part, or to improve the condition of wounds when they are very irritable, and discharge unhealthy, offensive matter, approaching to a state of gangrene or mortification. Fomentations are therefore divided into the following kinds, viz. *emollient, antiseptic,* and *anodyne.*

Emollient Fomentation.

1. (See *Emollients.*)
Boil marshmallows in water for some time, then strain off the liquor, and bathe the affected parts with it while warm.

Antiseptic Fomentation.

1. Emollient fomentation one gallon, muriate of ammonia four ounces, camphorated spirit six ounces.
2. Stale beer grounds and yeast, mixed with hot water, and applied immediately.

Anodyne Fomentation.

1. White poppy heads broken, two dozen, hemlock two handsful. Boil for two hours gently in six quarts of water
2. Wormwood dried and camomile flowers of each four ounces, rue three ounces, bay leaves two ounces. Boil them for one hour in a gallon of water.

Remark.—The efficacy of a fomentation depends on its being properly applied, therefore we have to observe, that the liquid should be as hot as the hand can bear; or to be more accurate, a thermometer may be used, and then the proper temperature will be about 150. Large flannel cloths are to be dipped into the fomentation, then lightly wrung out, and spread over the affected part; by the time this gets

a little cool, another cloth should be got ready, and applied in the same manner: this operation ought to be continued for half an hour at least, and repeated three or four times a day. The emollient fomentation is adapted to inflamed swellings, from whatever cause they may arise; and when it cannot be procured, warm water alone will be found a useful substitute. The anodyne fomentation, No. 1, is of great service in wounds or swellings, which are accompanied with great pain and irritability. The antiseptic fomentation tends to correct putridity and gangrene, in larger wounds of the lacerated kind, where the matter is thin, ill-coloured, and offensive: but in such cases, the assistance of *internal* remedies cannot be dispensed with.

FUMIGATIONS. These consist of substances which emit fumes or vapours by the application of heat, or other means. They are generally employed to destroy contagion; and though the *fumigations* recommended in books of farriery, as well as those in common use, are inadequate to that purpose, yet there are certainly some, which may be productive of great advantage. *Fumigations* are employed to prevent the spreading of epidemic distempers, or to destroy the contagion of *glanders:* for the former purpose I cannot, from experience, recommend any thing, though it is not improbable that the *nitrous fumigation* of Dr. C. Smith, or the following, may be found useful; but when a stable is contaminated with glanders, I can recommend them with confidence, provided the other means I am about to propose are carefully employed. These are, in the first place, to remove every particle of litter, hay, dust, &c. from the stable; as well as the pail, collar, and every thing which belonged, or was used for the infected horse. The rack, manger, and every thing on which the glandered horse could possibly have rubbed his nose, are to be well scraped, and afterwards washed with hot water and soft soap, or pot-

ash and lime in water; which has a strong cleansing quality, and if not sufficiently diluted will injure the operator's hands.

After this wash has been employed, the manger, &c. should be well washed with water; for should any potash remain, it might leave a dampness in the stable, from its property of attracting moisture from the atmosphere. The floor or pavement of the stall is also to be carefully washed and swept. After this, the whole is to be white-washed with whiting and a solution of glue. Before any sound horses are admitted into the stable, the following *fumigation* should be employed. The number of pans in which the materials are placed being adapted to the size of the stable.

Take of common salt eight ounces, manganese powdered six ounces. Let these be well mixed and placed in an earthen dish, then pour on the mixture, gradually, four ounces of vitriolic acid. As soon as the latter is added, the operator should leave the stable, shutting both the door and the windows. The fumes which arise from this mixture are highly injurious to the lungs, and must carefully be avoided; therefore this *fumigation* can only be performed in an empty stable. During the whole day, the stable door and windows are to be kept shut; but at night they may be thrown open, that there may be no danger in entering the stable next morning. I believe this to be the most efficacious of all the *fumigations*, having found that when glanderous matter is exposed to it, in a short time it is rendered perfectly harmless. The fumes which are generated by pouring oil of vitriol, or vitriolic acid, on powdered nitre, are said to be very effectual in destroying human contagion; how far it may be serviceable in veterinary practice, remains to be ascertained: but as the *fevers* of horses do not appear to be infectious, there is no great probability of its proving useful.

FIRING. We have noticed this subject in the

Materia Medica, but it remains to be observed, that unless this operation is performed with good instruments, and by a skilful hand, an indelible blemish will generably be the consequence. Many farriers pretend to do it while a horse is standing; but this should never be attempted, as it is impossible in this way to perform the operation correctly, and there is always danger of doing mischief. The horse should always be thrown down, and properly secured. The edge of the firing iron is to be rather thinner than the back of a small pen-knife, and of a round form. The back part of the instrument must be very substantial, that the heat may be retained a sufficient length of time. It is to be applied, when of a dull red heat, which in the day time is scarcely perceptible. The operator is to draw it rather quickly over the skin in perpendicular lines; but as the iron gets a little cooler, the motion of the hand is to be slower. It may be known when the instrument is applied sufficiently hot, by its leaving a whitish or scorched line upon the skin, but on no occasion should the skin be penetrated or divided by the iron. Several irons should be employed, that the operator may be constantly supplied with one sufficiently hot. When this operation is properly performed, the absorbent vessels have their action considerably increased, and are thereby enabled to remove any callous or boney substances which may have been formed about the joints or tendons, in consequence of strains or hard work. It is said also to contract the skin so as to make it act as a bandage to the subjacent parts. The day after the operation, it is advisable to apply a mild blister to the part. *Firing*, though a severe and painful operation, is often very efficacious, and the only one we are acquainted with for removing callous or boney swellings, which occasion lameness by impeding the action of joints or tendons; but it is too frequently made use of when milder remedies may be employed with success. The practice of firing colts, with

a view to strengthen their joints and tendons, is strongly to be reprobated.

It is always necessary to allow the horse a long run at grass, or rest, in a large loose stable, after he has recovered from the operation; and as long as the inflammation which *firing* occasions continues, the horse should be treated as we have directed, after blistering.

GALVANISM. It has been discovered within these few years, that an effect somewhat like electricity, may be produced on the body by the application of different metals in a certain way; and that a short time after death, the muscles may be excited to action by the same means, producing the most curious phænomena. From the name of its discoverer, Galvani, it is termed *Galvanism.* It has lately been employed for the cure of certain diseases, and it is said with considerable success; therefore it may be worth a trial in those disorders of the horse, for which at present we have no remedy, such as locked jaw, gutta serena, and other diseases of the eye. (See *Wilkinson's Elements of Galvanism.)*

GLYSTERS. Glysters are composed differently, according to the effect they are intended to produce. The simple opening glyster, which is designed merely to remove the contents of the lower parts of the belly, consists of water-gruel, and a little sweet oil; about one gallon of the former, and a pint of the latter. When water-gruel cannot be procured, warm water may be used, and linseed oil may be substituted for sweet oil; but I have often employed warm water alone with very good effect. The heat of the water should not exceed (or very little) that of the body, which is about 96 by the thermometer, or what is commonly termed *blood heat.*

This kind of glyster is extremely useful in the first stage of fevers, as it effectually removes any indurated fæces that may be lodged in the large intestines, without danger of creating debility. It is highly ser-

viceable also in inflammation of the bowels, when accompanied with costiveness, and when the bladder is inflamed or irritable, which is indicated by pain and difficulty in staling, the horse voiding only very small quantities, apparently mixed with matter, and that frequently; nothing relieves the animal more speedily than the simple glyster, if it be assisted by other appropriate remedies. The next glyster we have to describe is the *anodyne*, which consists of water made highly mucilaginous by means of starch or arrow root, and about two drachms of *opium* dissolved in it. The quantity of liquid should not exceed three pints, or two quarts at most. This glyster acts also as an astringent in very obstinate diarrhœas. The last glyster we have to notice is the *cathartic*, which may be composed merely of one gallon of water, and eight ounces of common salt; but when the bowels are very torpid, which is often the case in staggers, one ounce and a half of aloes may be added.

GRUEL. Water-gruel is extremely useful on many occasions. When medicines are given in the form of *drenches*, it makes the best vehicle, more particularly if the medicine be of an acrimonious nature, the mucilaginous quality of the gruel tending to prevent any unpleasant effect upon the stomach: for the same reason it is advisable to give gruel immediately after the application of any strong mineral preparation, such as sublimate, arsenic, &c. Nothing is more useful as an article of diet for sick, or convalescent horses than water-gruel, provided it is properly made; and as this is seldom done, we shall give the best method of making it. Take of fine and sweat oatmeal four ounces, water two quarts. Put the water over a slow clear fire to boil, and mix the oatmeal gradually with as much cold water as will make the mixture quite liquid. Add this to the water over the fire, before it gets very hot, and continue to stir the whole until it boils.

The gruel is then made, but may be improved by letting it simmer some time longer over a slow clear fire, for horses are very nice, and perhaps would not touch it if in the least smoky. Should the gruel be too thick, add warm water.

HYDRAGOGUES. Medicines that purge violently, and produce thin watery stools. Of this kind are elaterium and gamboge. It is a class of medicines of little or no use in veterinary practice.

LAXATIVES. Medicines that purge very gently, and without irritating the system. They are employed chiefly in febrile complaints, accompanied with costiveness, in which cases the strongest purgatives would be injurious. They are useful also in slight cases of grease, swelling of the heels, and all cases of external inflammation, when the horse is too weak to bear any considerable evacuation. On those occasions aloes is the best laxative, but in fevers, castor oil, with small doses of neutral salts, is most proper, being less liable to irritate the system.

Laxative Ball.

1. Succotrine aloes five drachms, Venice soap three drachms, oil of caraway twenty drops.
2. Barbadoes aloes four drachms, salt of tartar one drachm and a half, compound powder of tragacanth two drachms, sirup enough to form the ball.

Remark.—These balls always operate more effectually when assisted by exercise and bran mashes, than when the horse is suffered to stand in the stable without receiving any attention.

Laxative Drench for Fevers, &c.

1. The best castor oil one pint. For one dose.
2. Common salt three or four ounces, water-gruel enough to dissolve it perfectly; add to this of linseed oil eight ounces, for one dose.

Remark.—Though we have in No. 2 prescribed

linseed oil, there is no doubt that castor oil is preferable; but this cannot always be procured readily, and as many may object to the expense of it, where the disorder is but trifling, linseed oil may on such occasions be substituted. Salad oil is still better. We have recommended common salt in preference to Glauber's and Epsom salt, because it is more certain in its effect, and may be given in much smaller doses.

LINIMENTS. A term for certain external applications, generally of an oily kind, between the consistence of an ointment and oil.

Liniment for Thrushes.

Barbadoes tar one ounce, oil of turpentine one ounce and a half, vitriolic acid one drachm. First mix the acid and turpentine very carefully, then add the tar. This is a good application for thrushes, and rottenness of the *frog;* the ragged part being first removed with a knife, and the part well cleaned and dried.

Liniment for Sore Backs.

Extract of saturn half an ounce, vinegar one ounce, olive oil two ounces, to be incorporated well, by shaking.

Liniment for old Strains.

1. Camphor one ounce, oil of rosemary half an ounce, oil of turpentine two ounces, olive oil four ounces. Mix.

2. Camphor half an ounce, oil of origanum two drachms, soft soap two ounces, spirit of wine four ounces. Mix.

Remark.—The *liniments* for strains may be applied also to insipient spavins, wind-galls, indurated swellings, and to parts affected with rheumatic pain; by the addition of powdered cantharides, they may be converted into blistering *liniments*, and the flour of mustard renders them highly stimulating. We have

given a few receipts under the head *embrocations*, though nearly every thing that can be useful in that way is comprehended in the present subject.

LOTIONS. Liquids to wash diseased parts; they are employed chiefly in cases of external inflammation, or in cutaneous diseases.

Lotion for Inflamed Eyes.

1. Extract of saturn one drachm, spirit of wine two drachms, water eight ounces. Mix.
2. Vitriolated copper half a drachm, water eight ounces. Mix.
3. Virtiolated zinc one drachm, acetated lead one drachm, water twelve ounces. Mix.
4. Extract of henbane one drachm, water eight ounces. Mix.
5. Tincture of opium two drachms, water six ounces. Mix.

(See *Eye Waters.*)

Cooling Lotion for External Inflammation.

1. Extract of saturn one ounce, vinegar two ounces, camphorated spirit of wine three ounces, water eighteen ounces. Mix.
2. Crude sal ammoniac one ounce, vinegar four ounces, spirit of wine two ounces, water eight ounces. Mix.

These are remarkably useful in saddle-galls, and inflamed tumours, which it is proper to disperse.

Lotion for Foul Ulcers.

1. Vitriolated copper one ounce, nitrous acid half an ounce, water six ounces. Mix.
2. Nitrous acid one ounce, quicksilver half an ounce. Dissolve in an open place and in a large phial, or gally-pot, cautiously. When the solution is complete, add eight ounces of water.

OINTMENTS. External applications for wounds, &c. (See *Digestives*, *Detergents*, and *Blisters*. (See also *Emollients* and *Caustics*.)

Ointment for Mange.

1. Oil of turpentine one ounce, vitriolic acid two drachms. Mix cautiously in a large gally-pot, and avoid the fumes which arise. While this mixture is hot, add of hog's lard four ounces, sulphur vivum finely powdered two ounces. Mix.

2. Hog's lard four ounces, train oil two ounces, oil of turpentine one ounce, sulphur vivum four ounces. Mix.

Remark.—These are effectual remedies for the mange, both in dogs and horses.

Ointment for Sore Backs, from Saddle-galls, &c.

1. Ointment of althea four ounces, extract of saturn or goulard one ounce. Mix.

2. Camphor two drachms, oil of rosemary one drachm, oil of elder or hog's lard three ounces. Mix.

To these may be added ointments for fistula, poll-evil, and canker, but the remedies for those complaints have been already noticed under the articles, *Digestives*, *Detergents*, and *Caustics*.

Ointment for Spavins and Wind-galls.

Strong mercurial ointment four ounces, camphor half an ounce, oil of rosemary two drachms.

Softening and Cooling Ointment for Painful Cracks, or Ulcers of the Heels.

1. Spermaceti ointment four ounces, olive oil one ounce, sugar of lead two drachms, flowers of zinc one ounce. Mix.

2. Ointment of althea four ounces, extract of saturn three drachms, oil of elder half an ounce, lapis calaminaris finely levigated one ounce. Mix.

Saturnine Ointment.

Spermaceti ointment four ounces, cold drawn linseed oil one ounce. Melt them slowly, by placing the gally-pot in boiling water, and when the mixture

is cooling, add of Goulard's extract one ounce, continue stirring until the mixture is cold.

Remark.—There are various other ointments used by farriers, but the formulæ, or receipts we have given here, and in other places, will answer every purpose. There is an ointment termed *ægyptiacum*, much used by farriers, which is made by simmering over a slow fire four ounces of powdered verdigris, four ounces of honey, and eight ounces of strong vinegar. This is a detergent ointment, and the receipts we have given under this head are, I think, more efficacious.

OXYMELS. Mixtures of honey and vinegar. (See *Materia Medica.)*

They have been recommended in obstinate coughs, and as a gargle in sore throats. I do not believe they are beneficial in either of those complaints. There is an *oxymel of squills* kept, which is made by infusing fresh squills in vinegar for several days, then straining off the liquid, and adding to it as much honey as will, by boiling gently, and taking off the scum which rises, give it the consistence of sirup.

This preparation is certainly much better adapted as a remedy to old coughs, than the simple *oxymel.*

The dose is three or four ounces.

PECTORALS. Medicines that cure or relieve diseases of the lungs. (See *Expectorants*, and *Cordials, Pectoral.)* *Demulcents* are also useful as *pectorals* in some cases, and may be given in the form of *emulsions*, which see. Emollients also are useful in certain complaints of the lungs, particularly the linseed decoction, with a little honey dissolved in it. *Pectoral drinks* have been recommended in diseases of the lungs, which are generally composed of liquorice, figs, and marshmallows, boiled in water.

POWDERS. This sometimes is a very convenient form for giving medicines, as many horses will take them in their corn without reluctance. It is by no

means proper, however, for such as have a delicate appetite, and are remarkably nice in feeding; for, although they may after some time eat their food, yet the reluctance with which it is taken would prevent its being readily digested, or proving so nutrious as it would do, were it not so medicated.

Some horses, however, eat their corn very readily when mixed with powder, and to such it may be given without inconvenience. There is another objection to this mode of giving medicine, which is the difficulty of ascertaining whether the whole or not, or how much of the powder, that is mixed with the corn, is taken. But this may in a great measure be done away, by sprinkling the corn with water, and mixing the powder with it very carefully. As we have before observed, whenever a horse appears unwilling to eat his corn, thus medicated, the medicine should be given in some other form. The medicines best suited to this purpose are antimony, sulphur, resin, emetic tartar, nitre, aniseeds, &c. Medicines that are given in the form of powder, should be finely sifted, or levigated, and when kept in that form, a well-corked bottle is most proper for the purpose.

RELAXANTS. Medicines that are supposed to *relax* the fibres of the body; or such as diminish the capacity for motion in the living fibres. It is generally, however, applied to those which lessen or stop unnatural or increased motions, as in convulsion and spasm. The principal remedies of this class, are antimonials, bleeding, warm bathing, and opium.

REFRIGERANTS. Medicines which take off unnatural heat from the body, such as takes place in fevers.

The best remedies of this kind, are nitre, and other neutral salts (See *Materia Medica*), cold water, and bleeding.

RESOLVENTS. This term is applied to those applications which are said to disperse inflamed

tumours, or swellings, or to subdue inflammation of any kind. (See *Inflammation.*)

RESTRINGENTS. Medicines which restrain increased or unnatural evacuations. (See *Astringents*, *Anodynes*, and *Styptics.*)

ROBORANTS. (See *Tonics.*)

RUBEFACIENTS. A term used in medicine, for applications which excite redness upon the skin, and which are employed for the purpose of removing deeply seated pain, or inflammation. The principal medicines of this kind are mustard and oil of turpentine. (See *Embrocations* and *Liniments.*)

SEDATIVES. Medicines that allay or diminish spasmodic or painful motion in the living fibres of the body.

SIALOGUES. Medicines that cause an increased secretion of saliva, or a salivation; such as the preparations of mercury.

STIMULANTS. A term of very extensive signification, and may with propriety be applied to the greater part of the articles of the Materia Medica. According to the celebrated Dr. John Brown, every medicine was considered as a *stimulant:* but it is probable that some, particularly the narcotics, have an opposite effect, particularly the distilled laurel water. The term *stimulant* is generally applied to those substances which perceptibly increase the motion of the heart and arteries. And under this head a great variety of remedies are included, both *internal* and *external;* among the former are cordials, cathartics, diuretics, &c.; the latter consists of embrocations, ointments, liniments, &c. It would fill a volume to treat properly of this subject, therefore we shall dismiss it without any further observation.

If the reader is desirous to obtain information on this head, he may consult Cullen's Materia Medica, Murray's Elements of Materia Medica, Brown's Elements of Medicine, and Darwin's Zoonomia.

STOMACHICS. Medicines that strengthen the stomach and excite appetite.

The term is nearly synonimous with cordials in veterinary medicine; though from *stomachics* we generally expect a more permanent effect than from those preparations denominated *cordial*, as they approach more to the nature of *tonics*. A few receipts will be given under this head, which are intended for horses that feed badly, without any apparent cause, and such as are subject to flatulent cholic and indigestion. Horses of this description are generally lean and in bad condition.

Stomachic Ball.

1. Powdered gentian half an ounce, powdered ginger one drachm and a half, prepared natron or soda one drachm, treacle enough to form the ball for one dose.

2. Cascarilla powdered one ounce, myrrh one drachm and a half, Castile soap one drachm, sirup enough to form the ball for one dose.

3. Powdered quassia two drachms, aromatic powder one drachm and a half, salt of tartar one drachm, treacle enough to form the ball for one dose.

4. Powdered colombo root half an ounce, powdered cassia one drachm, powdered rhubarb two drachms, sirup enough to form the ball for one dose.

STYPTICS. Applications which suppress hemorrhages or bleeding. It is sometimes applied also to those internal remedies which cure bleeding from the kidneys, or red water, and bleeding from the lungs. When any considerable blood vessel is wounded in the horse, *styptics* are not to be depended upon; and when the bleeding is so inconsiderable as to submit to those applications, there is little reason to doubt that it would cease after a short time without their use. (See *Mat. Med. Styptics.*)

TEMPERATURE. This subject is very seldom attended to in the management of horses, and it is

very probable that many of their diseases arise from this omission. Horses that have been long accustomed to warm stables, generally receive injury by being put suddenly into such as are cold, particularly when they are exposed to a current of air: and it is a well-known fact, that many formidable diseases are produced by putting a horse that has been accustomed to live in the open air, too suddenly into a warm stable. To this cause may be attributed the various diseases to which horses are subject when taken from grass or camp. In a well-constructed stable, some method may easily be found for regulating the temperature of the air, and making it either cold or warm; for this purpose a thermometer should always be employed. Old horses that have been accustomed to warm stables, become lean and unfit for work if placed in a colder situation, though their allowance of corn be increased. External warmth is quite a cordial to them, and gives them health and spirits; but on no occasion do we recommend those hot, close stables, so highly valued by grooms, though a very prolific source of disease. The stable should be always properly ventilated, and the body kept warm by clothing, adapted to the season of the year, and the temperature of the air.

TONICS. Medicines that augment the vigour of the body permanently, and are therefore useful in all cases arising from debility.

Tonics.

1. Powdered bark one ounce, ginger two drachms, salt of tartar half a drachm. Form them into a ball with sirup.

2. Salt of steel half an ounce, aromatic powder two drachms, mucilage enough to form the ball for one dose.

3. Arsenic ten grains, ginger one drachm, powdered aniseed half an ounce, compound powder of tragacanth two drachms, sirup enough to form the ball for one dose.

UNGUENTS. (See *Ointments.*)

URINE BALLS. (See *Diuretics.*)

WATER. Much has been written respecting the different qualities of water, some having been considered as very injurious to horses, while others have been said to promote health and condition. Dr Bracken thought hard or pump water liable to produce the gravel or stone; and other authors have had still more whimsical notions on this subject. It appears probable that transparent and sweet water, that is, such as is most grateful to man, is most wholesome for horses, whether it be taken from a well, or from any other situation. The ill effects that have sometimes resulted from drinking certain kinds of water, may depend upon its being drank too largely, or at too cold a temperature, at a time when the *stomach* was not in a *condition* for receiving so much, or, upon its being so ill-tasted, that the horse does not take a sufficient quantity for the purposes of digestion; or if he does, it may create that degree of nausea, which proves injurious to the stomach, and impedes its functions. In the former way we may explain the production of cholic or gripes, by drinking largely of pump water in summer, when the body is heated too much; and in the latter we can account for that loss of condition and staring coat, so remarkable in horses that are kept on the coast, where the water is brackish.

APPENDIX.

Condition.

By the term *Condition* is to be understood not merely a fat and sleek appearance in a horse; it implies also a proper degree of vigour, by which he is enabled to perform extraordinary labour, without being too much fatigued. Every defect with respect to condition must originate either in *disease*, or in bad *grooming*. Under the latter head must be comprehended feeding, exercise, and the general management of the stable: the former will include various disorders, which will be concisely described, and the most effectual means pointed out for their removal.

In treating of the anatomy and physiology of the internal organs, an explanation has been given of that curious process by which the body is nourished, and enabled to perform its various functions with regularity. Thence it will appear, that in order to produce that degree of vigour and general healthiness of appearance which constitute good condition, it is necessary that these organs should be in a state of health, and that no impediment should exist to the performance of their functions. This, however, sometimes happens; we shall therefore proceed to show the various imperfections which tend to prevent a horse from acquiring condition.

1st. *Tenderness in the mouth, preventing the horse from masticating freely.*—It sometimes happens that the molar teeth or grinders wear so irregularly, as to have sharp edges, by which the inside of the cheek is wounded: the pain which the act of chewing occasions in this case induces the horse to swallow

some part of his food unbroken, which, being difficult of digestion, frequently passes through the body unchanged. This defect is particularly inconvenient in horses that are separated from others by *bails* only;* as in barracks their more active neighbours have an opportunity of sharing their allowance. This complaint may be removed by rasping down the sharp edges of the teeth, for which purpose there are files made by veterinary instrument makers, and by applying to the wounded cheek the following mixture: powdered alum ½ oz. honey 2 oz. vitriolic acid, (strong) 12 drops, infusion of roses 8 oz. Mix.

It will be necessary, until this defect is completely removed, to give the horse broken corn, which may be more easily digested. It has sometimes been found necessary to remove a projecting tooth before the horse can be relieved, for which purpose a large strong tooth instrument is made.

When young horses are cutting their teeth, the mouth sometimes becomes inflamed and tender. This is another circumstance which may impede mastication, but is easily removed by washing the inflamed parts frequently with the above mixture. Should a slight degree of fever supervene, bleed moderately, and give a dose of the fever powder. The corn which is given should be either softened by steeping it in boiling water, or be broken in a mill.

The lampas is said to be another impediment to feeding, and is therefore removed with a red-hot iron. This operation is certainly performed much oftener than is necessary.

2d. *Weakness of the stomach or bowels.*—Horses that have acquired the vicious habit termed *crib-biting*, suffer great inconvenience from the waste of saliva which it occasions; the stomach, being in a great measure deprived of this liquid, performs its functions

* See further remarks on bails in the subsequent section, "The Stable."

imperfectly; hence arise flatulent colic or gripes, general emaciation, and debility. The remedy commonly employed is a leathern strap, buckled tight round the neck, immediately beneath the jaw. This, however, is seldom effectual. A better method is to cover the edge of the manger, and every other part he can lay hold of, with sheep skins, (the wool side outward) until the habit is destroyed. There are other causes by which the energy of the stomach may be impaired. Among these are excessive fatigue, bad food, defect in respiration, or breathing foul air, taking too much food or water at once, or at any improper time, bots, fever; in short the stomach is so important an organ in the animal system, that scarcely any part can be materially injured without affecting it in some degree; and whenever the stomach is hurt, the whole system seems to sympathise and partake of the injury.

Weakness of the stomach is sometimes very easily cured. The powers of nature indeed are often capable of restoring its tone; at others we find the disease extremely obstinate, resisting the most powerful medicines. This difference depends upon the variety in the *causes* by which the weakness is induced. When it arises from loading the stomach with improper food, that contains scarcely any nutriment, such as straw, and where the horse has been fed in this way for a considerable time, the diet should be gradually changed to one more nutritive. During the time we are making this alteration, it is generally necessary to give one or two doses of laxative medicine, joined with aromatics (See *Laxatives*), to prevent inflammatory affection of the eyes, lungs, or heels, or, according to the more fashionable language of grooms, to prevent *humours* from breaking out. Should the appetite appear deficient, the cordial ball will be found of great service, given occasionally. When excessive fatigue is the cause of the weakness, which we often find after a hard day's run with the hounds, nothing is so effectual as the cor-

dial ball, particularly in old horses: it soon gives them an appetite, and renders them fit for work again much sooner than they would otherwise be. Where a speedy effect is required, the ball may be mixed with a pint of good beer or ale.

If a horse, after sweating from exercise or any other cause, is allowed to drink freely of cold water, the stomach is suddenly dibilitated, and the whole system is affected in consequence; hence arise flatulent colic, suppression of urine, shivering, quick pulse, and other symptoms of fever. (For the remedies, consult the Contents.)

The stomach sometimes becomes weak gradually, and without any apparent cause. This is first indicated by the appetite failing, which is soon followed by general debility, emaciation, and an unhealthy looking coat. The most effectual remedies in this case are the tonic balls and a nutritious diet; corn should be given more frequently than usual, but in small quantities; and a little malt on these occasions is extremely useful. The stable should be well ventilated, but not cold; regular exercise will also be very beneficial, and should never be omitted. It should be understood, however, that, although exercise tends to promote *strength*, if carried beyond the animal's power, it becomes a cause of debility: it is highly necessary, therefore, when a horse is in a state of weakness, to take care that his exercise is but moderate.

Worms in the stomach and bowels are a frequent cause of leanness and debility in horses; and while they exist, every exertion to promote condition will be ineffectual. (See *Worms.*) A defect in the organs of respiration will also produce weakness and emaciation.

If the blood be not duly supplied with that vivifying principle, which is derived from the air by breathing, a greater or less degree of debility must be the consequence; hence a want of tone is always observable in the stomach and bowels of broken-

winded horses, as well as a deficiency in the muscular power in general. The same evils will result from keeping a horse in too close a stable, where the air does not contain the usual proportion of this principle.

3d, *Imperfection in the liver or pancreas, or obstruction in the tubes or ducts, by which their respective juices are conveyed to the bowels.* (See *Anatomy of Internal Organs.*) The liver is not often diseased in the horse, unless it be from internal inflammation. When the exterior surface of the bowels or stomach is attacked by inflammation, it will spread, if not speedily checked by bleeding, &c., to the surface of the liver, and other internal parts; and when horses die from this disease, which they often do from improper treatment, the liver is generally found inflamed or mortified throughout its whole substance: but this is an acute disease, and therefore not connected with the present subject. It sometimes happens, however, that a horse becomes weak and lean, either from a deficiency or a redundancy of bile. In the former case, digestion will be imperfect, and the horse frequently costive; the appetite will be bad, the animal languid and sluggish, and generally hide-bound, the coat looking rough and unhealthy. The best remedy in this case is to give small doses of calomel, soap, and aloes, as recommended in jaundice, so as to keep the bowels in a more open state; or if the disease have existed some time, give in the first place a mercurial purgative, and afterward the following alterative: calomel one scruple, aloes one drachm, cascarilla powdered, and rhubarb, of each two drachms, ginger one drachm, castile soap three drachms, sirup enough to form a ball, to be given every morning for five or six days, unless it occasions purging, in which case it is to be discontinued for two or three days.

The horse's diet should be light and nutritious, consisting of ground oats, carrots, malt, &c.: regular exercise is of great use. In the spring or summer, a

run at grass is the best remedy. When there is too much bile formed, it occasions a loose state of the bowels, which causes the horse to become weak and thin. This complaint depends upon increased action of the liver, which generally ceases in a short time without the aid of medicine. Should the purging continue so as to reduce the animal's strength, the following medicine may be given, and assisted by a light nourishing diet, and very moderate exercise. powdered columbo root two drachms, cascarilla powdered one drachm, prepared natron 2 drachms, opium half a drachm. To be given every morning.

There are no external appearances by which a diseased state of the pancreas can be ascertained, though it is probably sometimes a cause of ill condition. There is reason to believe that want of condition depends in some cases upon an imperfect action of the lacteals, or those delicate vessels which convey the chyle, or nutritious parts of the food, into the blood. All the internal surface of the bowels is covered with very minute orifices, which are the mouths of the lacteals, and are supposed to be always open to receive such parts of the digested food as are destined for the nourishment of the system. It is not improbable that these minute orifices may sometimes be obstructed, or that the lacteals may be deficient in energy. Therefore when a horse continues thin and ill-conditioned, without any apparent cause, this may be suspected; and the success we have often met with in such cases, by giving a mercurial purgative, joined with a moderate stimulant or stomachic medicine, seems to justify the opinion. The following formula may be employed on this occasion: Barbadoes aloes half an ounce, rhubarb two drachms, calomel one drachm, ginger one drachm and a half, oil of caraways ten drops, Castile soap two drachms. Sirup enough to form a ball.

I should have observed before, that we sometimes meet with horses, particularly those of the blood

kind, that have an almost habitual looseness or diarrhœa; and some that cannot bear even moderate work, or even drinking freely of water, without becoming loose in the bowels, and consequently weak and faint. Such horses are generally observed to sweat much with the most moderate exercise, and sometimes when standing in the stable. This complaint is sometimes merely temporary, and is most likely to happen in the early part of spring, or about September and October; at which periods some changes are generally taking place in the coat, by which the bowels, and often the whole system, are rendered irritable and weak. In this case, the symptoms generally disappear with the cause; but as a horse may remain in this situation a considerable time, and be unfit for work, it is advisable to call in the assistance of medicine. The first medicine to be given is a stomachic laxative, and after that the tonic ball. The horse should be clothed moderately and exposed as little as possible to a current of air: but the stable should be well ventilated, and his water at the summer temperature, that is, about 50 degrees by Fahrenheit's thermometer. His exercise ought not to exceed a walk: but he may be taken out twice a day, if the weather be favourable. With respect to those horses that are habitually weak, or *washy* as it is termed, becoming loose and weak from moderate work or other trifling causes, there is no great chance of radical cure: but the animal will derive great benefit from medicine and care, and often be enabled to do his work with spirit, and without much inconvenience. The proprietor of such horses should always be provided with the following cordial, which should be given, not only when the looseness and weakness actually are present, but at any time when considerable exertion is required of him. If he be wanted for a journey, or a day's hunt, let him have a ball a little before he sets off, and another when he returns. If the horse be very young, it may be worth while to attempt a radical cure, by a

long run at grass. Horses of this description require great attention from the groom: they should never be exposed to the air without clothes, unless in the hot days of summer. Their water should be always at summer temperature, and given in small quantities often. Their food should be easy of digestion, their oats and beans given in a broken or bruised state, and their daily allowance should be divided into four or five feeds. Their hay should be of the best quality: mow-burnt hay is particularly injurious. A brisk circulation should be kept up in the skin and extremities, by frequent wisping the body, and hand-rubbing the legs. Moderate exercise is necessary and the horse should always be attended to the moment he comes into the stable, either from work or exercise.

Stomachic Purgative.

Barbadoes aloes three drachms, rhubarb two drachms, ginger one drachm, cascarilla two drachms, oil of camomile ten drops, prepared natron three drachms. Sirup enough to form a ball for one dose.

Tonic Ball.

Salt of steel half an ounce, columbo root three drachms, cascarilla bark two drachms, opium 1 scruple. Sirup enough to form a ball for one dose.

Remark.—Arsenic is an excellent tonic, but must be given with caution, and in small doses. (See the Materia Medica, where a great variety of formulæ for tonics are given.)

Cordial Ball.

Caraway seeds *recently* powdered two drachms, winter's bark powdered three drachms, prepared chalk two drachms, opium half a drachm, oil of aniseed twenty drops. Sirup enough to form a ball for one dose.

Having given a short account of the diseases or imperfections which prevent a horse from acquiring Condition, it remains for us to point out what kind of stable management or grooming is most conducive to his attaining it; and as a good stable is the first thing to be attended to, and is generally allowed to have considerable influence on the health and condition of horses, it will not perhaps be thought superfluous if we say a few words on this subject.

The Stable.

In the construction of a stable, there is perhaps no circumstance more deserving attention than that of ventilation, or of having contrivances for the ready admission of fresh air, and for the escape of that which has been rendered impure by breathing; and it is really extraordinary that so little attention should have been paid to so important a circumstance. Grooms in general make a point of closing every aperture they can find; and if at any time they are prevailed upon to open a window, it is commonly so small, and so inconveniently situate, as to be but of little service. Let any one for a moment consider how foul an atmosphere must be produced, in a close stable in which several horses are kept, by the constant exhalation of unwholesome vapours from the litter, by the steams of perspiration from the skin, and by noxious airs from the lungs; and he will not be surprised at the long catalogue of diseases, to which this improper treatment must subject these useful animals.

If a doubt remain in the mind of any one as to the impropriety of such close stables, let him enter one early in the morning, on its being first opened, and he will experience such a painful sensation in the eyes, and so violent a cough, as will afford him the most convincing proof of the noxious and stimulating nature of such an atmosphere; yet such is th

obstinacy and ignorance of grooms in general, that they cannot be prevailed upon to abandon this injurious practice. Even at this time stables are generally built too low, and unprovided with effectual means of ventilation.

A stable should be as lofty as it can be made conveniently, at least twelve feet; the foul air will then circulate in the higher parts, and the animal will not be constantly breathing an unwholesome atmosphere, which he must do when the ceiling is scarcely higher than his head. Proper apertures must be also made in the ceiling, communicating with the atmosphere by square wooden tubes, so contrived as not to admit the rain into the stable: the foul air and other unwholesome vapours will then readily pass off, while a proper quantity of fresh air may be admitted by means of windows. The next circumstance to be attended to is nearly connected with, and not less important than ventilation; namely, the so constructing a stable as to be able to regulate its temperature. or keep the air at any degree of heat that may be thought proper. It is generally allowed that a uniform temperature in a stable is very desirable; and it is certain that many of the diseases of horses are caused by sudden changes in this respect. Even slight variations of temperature, if frequent, are injurious; yet few stables are to be found where this inconvenience is effectually guarded against. To accomplish this desirable purpose, the windows should be in different sides, so that when a cold wind blows from any point, it may be shut out, while fresh air is admitted by the opposite window. There should be several of the apertures we have described in the ceiling, that they may be occasionally shut either wholly or partially, so that, by means of these and the windows, the temperature can at any season be easily regulated, according to the weather, or state of the horse's health, more accurately if a thermometer be kept—an instrument which appears to me a necessary appen-

dage to a well-constructed stable. If during the cold days of winter the contrivance we have proposed should be found insufficient to raise the temperature of the stable to the desired point, the air may be easily warmed to any degree by means of stoves placed on the outside, with iron chimneys passing through the stable.

Light is also a thing of much importance in the construction of a stable; and for the purpose of admitting it readily to every part, the windows should be large and properly placed.

There is no doubt that the eyes of horses are often injured by dark stables; and when a horse is just taken from a dark situation, it is easy to perceive that light at first irritates the eye, and gives pain; and this is more remarkable when he is brought suddenly into the sunshine; nor is it to be wondered at that so delicate an organ as the eye should suffer materially from the frequent repetition of this sudden change.

Though a light stable is desirable, the sunshine should not be allowed to fall on the eyes of a horse as he stands in his stall; nor should the walls or ceiling be of a white colour, as under such circumstances the eyes would be over stimulated, and rendered weak; and when it is considered how liable horses are to diseases of these organs, and how frequently they terminate in blindness, no one will think any circumstance tending to their preservation too trifling to be noticed. With regard to the best colour for the walls and ceiling, a stone or dove colour is perhaps to be preferred, and may be made by mixing a little lamp-black, ivory-black, or blue-black, with the common whitewash.

The door should be larger and higher than we usually see it, for horses are very liable in passing through a narrow or low one, to strike their hips or heads; I have seen some troublesome accidents happen in this way; besides, even if the hair be struck off about the hips, it is thought a blemish,

because it may not grow again; or if it do grow, the hair may be white.

In fitting up the interior of a stable, particular attention must be paid to the size of the stalls, which should not be less than six feet wide, and the sides sufficiently high to prevent any sort of contact or communication between the horses. I know it will be urged as an argument against this, that they are sociable animals, and thrive better with a companion than when alone; this is certainly true: but, on the other hand, I am convinced from long observation, that horses do not feel themselves in solitude, when they are thus prevented from touching or playing with their neighbours; besides, if we consider the numerous accidents that happen from low stalls, how frequently they kick or bite, and otherwise injure each other, there can be no doubt I think of the superior advantage of high stalls. At this moment I have under my care a fine mare, who from kicking very high got her hind-leg over the stall, and has received a deep and extensive wound, which will probably prove fatal. The stall should also be of considerable depth, that a horse may not, by drawing back, have the power of kicking those in the adjoining stalls. The method of separating horses by means of bails, or poles, suspended by chains, I think very injudicious; the only recommendation it can possibly have is the little expense that attends it, and its allowing a greater number of horses to stand in a stable. I am convinced, however, from what I observed during the time I had the honour of serving in the royal dragoons, that, notwithstanding these recommendations, they are really in the end more expensive to government than stalls would be; scarcely a day passing without some accident happening from the bails: many dangerous, and some fatal wounds were occasioned by them. I once saw a horse break his spine, or back bone, by endeavouring to rise while under the bail; and several horses lost their sight from being

bitten in the eye: but the most serious inconvenience perhaps attending bails is the impossibility almost of feeding every horse equally; some horses feeding very slowly, and others so expeditiously, as to devour as well as their own great part of their neighbour's allowance in a short time. To this may be added the facility with which contagious diseases are communicated, the disturbance a horse is liable to when fatigued, and the difficulty of lying down quietly.

The floor of the stall should be made of hard brick, as a more equal surface is then formed than can be obtained by paving with pebbles. Very little declivity is necessary to drain off the urine; and as great inconvenience sometimes arises from suffering a horse to stand in a stall where the fall is considerable, creating unnecessary exertion in the muscles of the hind-legs, and keeping the ligaments constantly in a tense state, it has been recommended to make the drain in the middle of the stall, whereby the hind and fore feet of the horse might stand on a level. In whatever way, however, the stall is made, it should be carefully cleaned once a day, that none of that putrescent matter may accumulate which generates ammonia, or that pungent vapour which is so abundantly found in close filthy stables. An iron rack is preferable to one of wood, being more easily kept clean, and furnishing no splinters; which, where wooden racks are used, sometimes injure the mouth. The manger may be so contrived, as to slide into the wall like a drawer; and then, while the groom is wisping him, he would have nothing to lay hold of with his mouth, by which practice horses often become crib-biters. The height both of the rack and manger should be such as to enable the horse to feed with the greatest ease: the former is sometimes made so high, that the horse is obliged to exert the muscles of his neck considerably, in order to reach it; and this has been so placed, under an idea of its having a tendency to make him carry his

head more gracefully: it is more probable, however, that the only effect of it is to make the horse uncomfortable while feeding. It has indeed been lately recommended, as the best plan, to place the racks on a level with the manger, so that the horse may feed as he does in a state of nature; but I have had sufficient trial of this plan to be convinced of its being in every respect less convenient and economical than the common rack.

Feeding, Exercise, and Grooming.

These are subjects of considerable importance, and require more attention than is commonly paid to them, as the health and condition of horses depend greatly on their being properly managed.

When a horse is in a state of nature, and using only voluntary exercise, there cannot be a doubt that the green food, which the bountiful Creator provides for him, is better calculated than any other to keep him in perfect health, and satisfy his wants: but when he is domesticated, and employed in the various labours for which he is found so essentially useful, it is necessary to adapt the quantity and quality of his food to the nature of the work he has to perform. When therefore we undertake to get a horse into condition, it is necessary first to inquire for what kind of labour he is designed; whether it be for the turf, the chase, or the road. A horse, without doubt, provided he is in health, may have his condition and wind brought to the highest state of perfection it is capable of, merely by judicious management in respect to feeding, exercise, and grooming; and notwithstanding the great mystery and secrecy affected by those who make a business of training race horses, I will venture to affirm, that it is a very simple process, and easily to be accomplished by any one, who will attentively consider the principles we shall lay down, and not suffer himself to be influenced by an ignorant groom. It

is a fact, not sufficiently known perhaps, that the strength of an animal, or any part of the body, may be increased to a considerable degree, by means of exercise properly conducted; and as breathing is effected by muscular exertion, it follows that the strength or perfection of this function, or as it is commonly termed *good wind*, must depend on the strength of those muscles by which breathing is performed; and by keeping in view this single principle, we shall do more for the improvement of a horse's wind, than we could by learning all the mysteries of training. In order to have a clear idea of the method of getting a horse into high condition and good wind, let us suppose him just taken from grass; it being understood, that every horse, who works hard during the other parts of the year, will in summer be allowed this necessary laxation, without which the feet, as well as the sinews, joints, ligaments, &c., of the limbs, will be liable to suffer materially; and not unfrequently the general health of the animal is injured by such privation. But should any one be so situate as to be unable to procure this renovating indulgence for his horse, he must endeavour to substitute for it a large airy stable, where the animal may be turned loose. If he cannot get fresh vegetable food, such as lucerne, vetches (tares), clover, &c., he will find carrots a useful succedaneum during this time of rest. The horse should be allowed to drink frequently; and if he be not immoderate, he may be suffered to drink as often and as much as he pleases. He should be fed sparingly with oats; and on no account be allowed beans or any thing of the kind. The best general diet of the dry kind is, perhaps, a mixture of oats, chopped hay, and bran; to be given alternately with green food; or if a sufficient quantity of green food can be procured, very little dry meat will be necessary. This treatment will serve in some measure as a substitute for a run at grass, provided the stable be large and airy. The light also should

be freely admitted; and if a convenient court be adjoining to the stables, the horse may be suffered to run in and out at pleasure: but if there be nothing but the stable for him to run in, it will be proper to walk him out quietly every morning and evening, allowing him to drink freely in a running stream or river; the feet, during this time, should be kept cool and moist, for which purpose they may be stopped daily with a mixture of soft clay and cow-dung. When a horse is taken from grass, or from the situation and treatment we have just described, in order to be got into condition for racing, hunting, or the road, the first object of attention is to bring about the necessary change in his food, and other circumstances, as gradually and with as little inconvenience to the animal as possible. If he be taken from grass, let him be put at first into a large airy stable, and suffered to exercise himself in it. Let him drink frequently; and, instead of depriving him suddenly of his green food, allow him at first some carrots, with bran, and a moderate quantity of oats. He should be walked out once a day at least. His allowance of oats should be gradually increased, and that of bran and carrots in like manner diminished, until the latter is wholly discontinued. If he be a large drinker, he should be allowed but a moderate quantity at once; but at all times, and in almost all circumstances, it is proper to allow a horse water four times a day; which, instead of oppressing his stomach, or injuring his wind, will facilitate digestion, and materially conduce to the preservation of health, and the improvement of condition. I am aware of the prejudice that exists against this practice—that it is supposed to give a horse a large belly, and render him unfit for galloping any length of time, without endangering his wind. I am convinced, however, not only by my own experience, but by that of some experienced sportsmen also, that, so far from injuring a horse in any one respect, it is extremely beneficial; and that, when a horse is allowed to drink

four or five times a day, he is not inclined to drink much, and often does not drink so much in the twenty-four hours, as one that is allowed to drink only twice a day as much as he pleases. As the horse's allowance of oats is increased, so should his exercise be; and if this be properly managed, there will be no absolute necessity for bleeding or medicine. It is necessary, however, to observe the horse carefully during the time we are increasing his allowance of oats, and diminishing that of carrots and bran; and if he appear dull, or have a cough, however trifling, it indicates an inflammatory disposition of the body, and points out the propriety of moderate bleeding, or a laxative. But under proper management I do not think such symptoms would ever take place, though they almost always do when a horse is changed from grass to a close stable and dry food too suddenly; and in such cases both bleeding and purging are indispensably requisite to prevent the occurrence of very serious diseases. It is from this circumstance, perhaps, that the absurd custom of giving exactly three strong doses of physic, as a necessary preparative, took its origin. When a horse has been taken from grass about a week, I think it advisable to give him a very mild purgative; not that I am convinced of its being absolutely necessary, but because I feel confident that it cannot do any harm; and if the horse have been fed too liberally, or not exercised sufficiently—or should the stomach and bowels be out of order, or have any worms in them—a mild purgative will be of great service. It is on this ground that I always recommend two or three doses of mild physic during the time a horse is getting into condition; but I have seen so many instances of the injurious effects of the strong physic recommended in many books of farriery, and commonly given by grooms, that I think it necessary to advise the reader never to suffer his groom or smith to prepare or prescribe a dose of purging medicine. That such strong do-

ses are often given without any immediate bad effect, is no proof of their innocence, still less of their utility. I can truly assert, that I have seen many horses quickly destroyed by strong physic, and a great number that have never perfectly recovered from the debility it occasions.*

During the first week of the horse's being taken into a stable walking exercise is most proper; but after this it may be gradually increased to a trot or canter; and if the exercise occasion any degree of perspiration, he should be carefully cleaned, and otherwise attended to, as soon as he gets into the stable.

By thus gradually bringing a horse from a state of nature, that is, from the open air and green food, to a comfortable stable and dry grain, he will be in little danger of those troublesome diseases, which are often the consequence of sudden changes, and of a different kind of management; and by duly pro-

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* A valuable blood-colt was attacked with colic, which appeared to be of the flatulent kind, and, though violent, not dangerous. The usual remedies were ineffectually employed; and it was found, in attempting to give a clyster, that the internal coat of the gut was so loose and so enlarged, that there was no possibility of injecting it; the colt died about sixteen hours after the attack. On examining the body after death, all the bowels were found nearly healthy, except the *rectum*, or last gut, near its termination, in which the inner coat was so loose and large, that the cavity was nearly obliterated, and scarcely any passage left for the excrement. The internal sensible coat of the stomach appeared also in a diseased state, being very tender, and easily separated; but it was not inflamed. About a week after, I was accidentally informed, that the man who had the care of this colt, and was about to train him for the turf, had given him three doses of physic; and that the "last had operated *so well*, that he thought the colt would never have ceased purging." This was nearly the man's expression, which he had communicated, in the way of conversation, to a groom, before the colt was taken ill.

portioning his exercise to the nutriment he receives, and by gradually bringing the muscular system to that degree of exertion for which the animal is wanted, there is no doubt that his wind, strength, activity, and general condition, will be brought to the highest state of perfection it is capable of attaining. In describing the general management of horses in the stable, we think it necessary to be very particular, as there are many apparently trifling circumstances which have considerable influence on the horse's health, though generally little attended to.

Horses are employed in hunting, mail or stage coach horses, in short, all are obliged to undergo great and rapid exertion at certain periods, require a different treatment from such as work more moderately. The former have occasion for lying down as much as possible, that the muscles may the more readily recruit their strength. But the latter do not require so much rest in a recumbent state, and suffer no inconvenience from standing during the day; therefore their litter should be removed every morning, and shook up in the open air. The advantages of this plan are considerable, though it may be thought by knowing grooms an unnecessary trouble. The feet will be thus kept cool; and the hoof will not be so disposed, as it commonly is, to contract or shrink; for straw, being a bad conductor of heat, causes the feet to become too hot; in which state the horny matter has always a tendency to contract: hence arise sand-cracks, thrushes, &c. Unless a horse has thin flat soles, it is always proper to *stop the feet*, as it is termed, with a mixture of cow-dung, beaten into a smooth mass with a little fine clay, and a small proportion of potash. The feet should be examined daily; and if the soles should appear to be softened too much, that is, if the horn bends or gives way in the least under the thumb by the strongest pressure we can make, the stopping must be discontinued.

Horses that have been accustomed to stand on litter during the day sometimes feel a difficulty in, or reluctance to staling, when they are deprived of it. In such cases, a little straw should be thrown under the belly, so as to prevent the urine from splashing about their legs.

The best food for horses that work hard is oats and hay, with a moderate quantity of beans. The latter, however, should not be allowed, unless the horse's work be considerable, as under moderate exertion they dispose the system to inflammatory complaints, such as coughs, inflamed eyes, &c. I am convinced that horses whose labour is severe are often injured by being stinted in water, particularly when they are allowed a large quantity of food. It is a common practice with waggoners, when their horses come in from a long and fatiguing journey, their strength almost exhausted by long-continued exertion and sweating, to offer them immediately an unlimited quantity of food, and very little (most commonly not a drop) of water. Under such circumstances, the stomach is not able to digest the food that is taken in; and I firmly believe that the staggers are often the consequence of such management. When a horse comes in from a long journey, he should always be allowed a small quantity of water before he is fed; and if he be allowed a little immediately after feeding, it is more likely to promote digestion, and prove beneficial, than to injure the animal. It is certainly a good plan, to give horses a moderate quantity of water just before the end of their journey; and I am satisfied that, by allowing them to sip a little water several times during a long journey, particularly in warm weather, they are refreshed and invigorated, but never injured. When beans are given to a horse, they should always be broken; and it is probable that oats would be more nutritious in that state. A horse that works moderately does not require more than a peck of good oats, and about twelve or fourteen pounds of

hay in the twenty-four hours: but large draught horses require a greater quantity both of oats and hay.

Horses employed in hunting, or for expeditious travelling, require great attention as to grooming, feeding, &c. Their allowance of hay should not exceed twelve pounds in the twenty-four hours; and it should be divided into three feeds—four pounds in the morning, two at noon, and the remainder at night. If a peck of oats be allowed for the same period, it should also be divided into at least three feeds, giving water before each. When a larger allowance of grain is required, which must be the case with hunters, post-horses, &c., either the quantity of oats may be increased, or a certain proportion of beans may be added; but on no occasion should the quantity of hay be increased for horses of this description. I think there would be no danger, and perhaps great advantage, in allowing horses that work hard, either in hunting, posting, or in mail or stage-coaches, an unlimited quantity of good oats, with a moderate proportion of beans, provided it be given at several times, so that they may not load their stomachs, and injure the digestive power. If any other food be given with the oats and beans, which however appears needless, it should consist of clover-hay, cut like chaff, and a small quantity of fresh bran: the former, if not cut too short, will make him masticate his food more perfectly, and cause it to be digested more easily: but when a horse has any kind of cough, or is imperfect in his wind, neither cut hay, chaff, nor bran, should be given, as they are apt to irritate the throat, and excite coughing; and it is necessary also in this case to sift the oats, and shake the hay, so as to free them from dust, as this will often occasion a violent cough for a time, and aggravate the original complaint. This will be more effectual, if the oats and hay be slightly moistened with water. Horses of this description being generally greedy of water, and so voracious as to devour their litter if kept from hay, it is advisable

to muzzle them immediately after feeding. Some advantage also will be derived from giving them a moderate quantity of carrots now and then, particularly when their work happens to be but moderate, this vegetable being nutritious and easy of digestion. Much has been said by writers on farriery respecting the kind of water that is most wholesome for horses. The greater part seem to prefer pond-water, where the bottom is composed of clay and chalk. It appears to me, that the most desirable kind of water is that which horses like best, provided it be not too cold; and I think it probable, that the ill effects that have sometimes been produced by drinking certain kinds of water, have not been occasioned by foreign or impure matters contained in it, but merely by its *coldness*; and I have found it the best plan to give clear river water in summer, and well water in winter; the latter being *warmer* in cold weather than water exposed to the air, and *colder* in summer Some old author (I think Dr. Bracken) has expressed a suspicion that the *hardness*, as it is termed, in well water, might occasson the stone or gravel. This is a disease, however, that scarcely ever happens to horses, though we sometimes meet with stones of a large size in the *bowels*, formed gradually by the earthy matter taken in with the food; and if they were subject to calculous diseases like men, it is almost impossible that the very small quantity of stony matter contained in hard water could have any share in their formation, being quite of a different nature from that found in the human bladder. It seems to be generally known, that brackish water (that is, water impregnated with saline matter which is commonly met with near the sea) is rather injurious to horses, causing a rough dry coat, and loss of condition. This, perhaps, is not occasioned by any direct operation of the saline matter which such water contains, but by the horse not drinking a sufficient quantity, on account of its unpleasant taste, for the purpose of digestion.

It is by no means advisable to accustom horses to warm water in winter, or to let the water stand many hours in a warm stable, so as to become nearly as warm as the air of the stable; as it makes the horse liable to the flatulent colic or gripes, whenever he happens to drink cold water.

In sickness, and during the operation of physic, when it is absolutely necessary to allow warm water, it should never be discontinued suddenly: the change should be brought about as gradually as possible. It is not a good practice to give horses nitre and other medicines in their water or food, because the dose cannot be accurately ascertained in this way; and the water, instead of promoting digestion, often has a contrary effect, exciting nausea, and weakening the stomach. It appears to me a better plan to water horses, during their exercise, at a pond or running stream, than in the stable, except it is in winter; and even then it would be advisable, were it not for the inconvenience they are liable to suffer from standing in the water while drinking: but the common practice of galloping them immediately after is highly improper.

It has been asserted by some, that horses work better, and more effectually preserve their wind and condition, when allowed only a small quantity of water; or, as they express it, "it matters not how little he drinks, provided he feeds heartily." This opinion, like many others, has arisen from the foolish and mischievous practice of forming general rules upon a few facts, or a very limited experience; and too often, I fear, from examining those facts through the medium of prejudice. It must be granted, that we sometimes meet with horses that become loose in their bowels, and fall off in condition, sweating violently, and appearing fatigued from moderate exercise, if allowed to drink even two pails (five or six gallons) in the twenty-four hours; particularly when they are employed now and then in hunting, or any kind of violent exercise: but this is to be

attributed to a weakness of constitution not often met with in horses, and points out to us the necessity of observing a horse attentively when we first undertake the management of him, in order to ascertain what quantity of water is most conducive to the preservation of his health and condition; and if we find a horse shivering, and his coat staring immediately after drinking freely, it is not to be hastily concluded, that he is to be allowed only a small quantity of water daily. In such a case, a very moderate quantity should be given at once, and the horse should be exercised immediately after, in which way he will generally be soon brought to drink a proper quantity in the course of the day without inconvenience. The best time for exercising horses is early in the morning, as soon as the stable is opened; during which time the stable doors should be kept open, and the foul litter thrown out. As horses that work moderately do not require a bed in the day time, it will be advisable in such cases to remove all the litter from the stall, and expose it to the air; spreading only a small quantity at the back part, to prevent the horse from splashing his legs in staling. It will perhaps be thought unnecessary to exercise horses that work, particularly such as are employed in hunting or expeditious travelling: I think, however, they are always the better for it, provided it be done with prudence. It certainly is not proper to take out a horse for exercise, that is designed for hunting the same day; but in the intermediate days it should never be omitted; and if a horse's work be moderate, such as ten or twelve miles a day, a little exercise in the morning will enable him to perform it better. Horses of a full habit, or such as are subject to *humours*, are greatly benefited by exercise, which on such occasions may be carried so far as to produce sweating. But great care is then necessary: they should be walked about for some time, that they may cool gradually; and as soon as they return to the stable, they should be

well wisped, and their legs hand rubbed. Swelling of the legs, grease, inflamed eyes, and other troublesome complaints, will be thus more effectually prevented than by bleeding every now and then; which, though it affords temporary relief, will gradually increase the disposition to disease. The exercise which a horse enjoys, when kept loose in a large stall, is particularly beneficial, and should always be allowed when the stable is sufficiently large to admit of it, instead of being kept constantly in one position, his head tied to the manger, and his fore legs generally higher than his hind legs: he can then turn himself about, and enjoy comparatively a state of liberty.

In summer, or whenever the weather is temperate, horses should be cleaned in the open air when they return sweating from work or exercise; for, if put immediately into a warm stable, they often continue to perspire so long, as to suffer some injury from it. The common practice, however, of washing the legs with cold water should never be allowed, unless the horse be exercised, or have his legs well rubbed immediately after. It is superfluous, perhaps to point out the impropriety and danger of plunging a horse into a river while sweating from severe exercise, a practice commonly adopted by proprietors of post and stage-coach horses: that it is often done with impunity must be granted; but it is probable, that many of them suffer from the treatment, though the ill effect is not immediately observed.*

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* It appears, from the experiments of Dr. Currie, that when the heat of the skin is above the natural degree, the application of cold water is highly refreshing and invigorating; but when the heat of the system has been in some measure exhausted by continued exercise and perspiration, it will generally produce considerable debility; and in the human body the most dangerous consequences have ensued from it. The same observation applies to cold water taken into the stomach, which on such an occasion has been known to cause sudden death

When a horse returns from exercise or work, his feet should be carefully picked out and washed; and if the hoof be dry and brittle, feeling hot, and appearing contracted, a mixture of cow-dung and soft clay should be applied to the soles. The horse's heels also require attention; and if any small ulcer or *crack*, as it is termed, be observed, or if they be tender, swollen, or smell offensively, the proper remedies should be immediately applied. These things, however, very rarely happen when the groom does his duty. It should be remembered, that when a horse is changing his coat, that is, about the latter end of September, and beginning of October, he is more susceptible of cold than at any other time; and as the coat then falls off so readily, the curry-comb should be laid aside, and the horse exposed as little as possible to cold or rain. Moderately warm clothing, and frequent hand-rubbing to the legs, will be found highly useful at this time. When these precautions are neglected, horses often become weak and unfit for much work, sweating profusely from moderate exercise, and sometimes purging: troublesome cough and staring coat generally accompany these symptoms. The common remedies on this occasion are bleeding, or strong purgatives, which are sure to increase the debility; nor are antimonials, or medicines that act upon the skin, proper to be given. The most effectual medicines are those of the *tonic* kind, with moderate stimulants; and when the bowels are loose, a small proportion of opium. These, however, will avail little, unless assisted by due attention to grooming. Though we

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It is probable, therefore, that many of the diseases of these poor animals arise from the debility which this treatment occasions; and perhaps the mischief would be greater, were it not that the river or pond is generally at a little distance from the stable, so that they get some exercise immediately after their immersion, and that the stable is generally very warm.

have so strongly recommended ventilation in stables, it must not be inferred that a cold stable is desirable: horses seem to thrive most in one that is moderately warm. I have known old horses, that could not be kept in condition in a cold stable, even upon the highest feed, do well when removed to a warmer one: this, however, is the effect of habit; and it is probable, that if a horse were accustomed, from the time he is first taken up, to a cold stable, he would never require any other: but when from his youth he has been kept in hot stables, his body constantly clothed, and his stomach frequently stimulated by cordials, it cannot be supposed that he is able to endure cold. It is necessary therefore, on purchasing a horse, to discover in what manner he has been kept, and whether he have been accustomed to any particular management; for instance, the custom of giving cordials to horses, after a hard day's hunt, is often rendered necessary by the practice of keeping them without food or water on the morning they are so employed. In describing the peculiarities in the structure and economy of the horse's stomach, we have observed, that this organ is remarkably small, requiring to be supplied frequently with food When a hunter then goes out with an empty stomach, and is perhaps kept out eight or ten hours without feeding, generally galloping great part of the time, the stomach is so exhausted on his return, that he has scarcely any appetite, and refuses his food, until the stomach is roused by a strong cordial: a habit is thus induced, and cordials, after a time, become as necessary to a horse accustomed to it, as spirit to a dram-drinker.

Yet there surely can be no danger in giving a moderate quantity of oats and water very early in the morning, previous to hunting. If he have to walk four or five miles to cover, there can be no danger of his stomach being oppressed by the time he arrives, nor a doubt of his performing better than he would otherwise have done.

Of the Age of a Horse.

The age of a horse may be discovered by certain marks in the front teeth of the lower jaw and the tushes, until the eighth year, above which time they are generally worn out. An experienced person can, however, after this period, judge of the age, with some degree of accuracy, by the countenance and general appearance of the animal, as well as by the length of the teeth, and form of the tushes.

Between the second and third year, a colt begins to change his *sucking teeth*, as they are termed, for others of a larger size, and of a different form and colour. The *sucking teeth* are small, of a delicate white colour, some of them perfectly smooth on the upper surface; others have a small narrow cavity on that surface, but very unlike those marks of the *permanent teeth*, by which we judge of the age. The number of teeth in the front of the mouth are twelve, six in the lower and six in the upper jaw. (We take no notice of the molares, or grinders, as they are not concerned with this subject.) When a colt is three years old, we may observe that the four front *sucking teeth* are lost, and that, instead of them, four others have sprung up, of a very different appearance, being larger, of a darker colour, and having a considerable cavity on the upper surface, and a small dark coloured groove in front: these are termed *horse's* or *permanent teeth*. Between the third and fourth year, the four teeth next these are lost, and replaced, in the way we have just described, by horse's teeth; so that when a colt has completed his fourth year, there are eight horse's teeth observable and only four colt's teeth, one at each extremity, or corner, as it is termed. About the middle of the fifth year these also fall out, and are succeeded by horse's teeth. The corner teeth of the horse, particularly of the under jaw, are different from the rest, being smaller, and of a shell-like appearance: their cavities are chiefly within, the upper surface being a

mere edge; but about the end of the fifth year they are larger and more like the other teeth. It is generally between the fourth and fifth year that the tushes make their appearance, though sometimes earlier.—The tushes are four in number, and situate about an inch from the corner teeth; at first they are small, terminate in a sharp point, are rather convex on their external surface, but within have two concavities or grooves separated by a ridge. These, as well as the teeth, are gradually undergoing an alteration in their form, becoming longer, and losing the concavities on the internal surface. About the seventh year the concavity is considerably diminished, and in old horses the surface becomes convex, the tush acquires a round form, and the extremity, instead of being sharp, is quite blunt, as if the point had been broken off, and the new surface afterward polished. We must now return to the teeth, the appearances of which we have described, as far as the completion of the fifth year of a horse's age. After this period we judge of the age by the size of those cavities which we have described on the upper surface of the tooth; for the friction to which that surface is almost constantly exposed gradually wears it down, and at length the cavity or mark is totally obliterated. The marks in the upper teeth most commonly remain until the twelfth year, sometimes longer, but those in the under teeth are worn out about the end of the eighth year; we shall therefore confine our description now to the under jaw.

As the two front teeth are the first that make their appearance, it is obvious that their marks will be lost sooner than those of the other teeth; and if we examine the mouth of a horse that has just completed his fifth year, we shall find, that they are nearly, and sometimes quite worn out: those in the adjoining teeth are about half their original size, while the marks of the corner or end teeth are perfect. At the end of the sixth year, the only cavities observable are in the corner teeth, and these are about half

their original size: the tooth has at this period lost the shell-like appearance we have before described, and is not different from the other teeth, except in having a mark or cavity on its upper surface. At the end of the seventh year the marks of the corner teeth also are obliterated, and then the horse is said to be aged. We often find, however, that the marks of the corner teeth are not totally effaced at this period: a small dark coloured spot may be observed in most horses until about the end of the eighth year. From this period we have no criterion by which the age may be ascertained, but it is said that the marks of the upper teeth will enable us to judge of the age until the thirteenth year; the marks of the front teeth being worn out when he becomes eight years old, those of the adjoining teeth at ten, and the corner teeth at twelve: but I cannot say how far these marks can be depended upon.

Broken Knees.

The first thing to be done is to cleanse the wound perfectly; and if it be at all deep or extensive, or much bruised, a goulard poultice is to be applied, by means of the leg of a worsted stocking, taking care to renew it twice a day, that it may be constantly soft and moist. This, in two or three days, will give the wound a healing appearance, and cause a white healthy matter to flow: it may then be discontinued, and the digestive ointment applied. Should the matter assume a bad appearance, losing its white colour, becoming thin, and smelling rather offensively, something stronger will be requisite, such as the detergent lotion, made hot; and if, after this, the new flesh grow too luxuriantly, rising above the skin, apply the caustic powder, and a considerable degree of pressure by means of a linen roller or bandage, and a bolster of lint. By this treatment the wound will soon heal. But we must not stop here; for unless the swelling is completely removed, and the hair regenerated of its original colour and smoothness,

the horse would be considered of very little value. As soon, therefore, as the wound is completely healed if any swelling be discernible, apply the following liniment, so as to excite a moderate degree of vesication, or blistering, and repeat it after this effect has perfectly subsided. Should the swelling feel hard and callous, and be of considerable size, a strong blister will be preferable.

The Liniment.

Powdered cantharides two drachms, camphor half an ounce, spirit of wine four ounces. Mix them in a bottle, and let it stand in a warm place about a week or ten days, shaking the bottle frequently; then strain through blotting paper, and it is fit for use.

It often happens, after the wound is perfectly healed, that a small scar or mark will be observable; and though the part may be free from any hardness or swelling, the value of the horse will be greatly lessened by this appearance. A variety of ointments have been recommended for promoting the growth of hair on the part, and thereby removing the blemish: the following I have found more effectual than any of them.

Ointment for Broken Knees.

Ointment of wax two ounces, camphor two drachms, oil of rosemary one drachm. Mix.

The colour of this ointment should be suited to that of the contiguous hair, which will so conceal the blemish, that it will not be observed, unless the part is strictly examined; and at the same time the ointment will cause the hair to grow up gradually, until the mark is completely removed. If the horse be of a bay colour, the legs and knees are generally blackish. In this case mix a little ivory black with the ointment: if a chesnut colour, Armenian bole may be mixed with it.

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